# CD car radio 69DC902/00/10

# 69DC922/00/10/80

Service
Service
**Service**

**For repair information of the CD deck see Service Manual of CD mechanism deck CDM-9/MOD-4 4822 725 23506**

# ServiceManual

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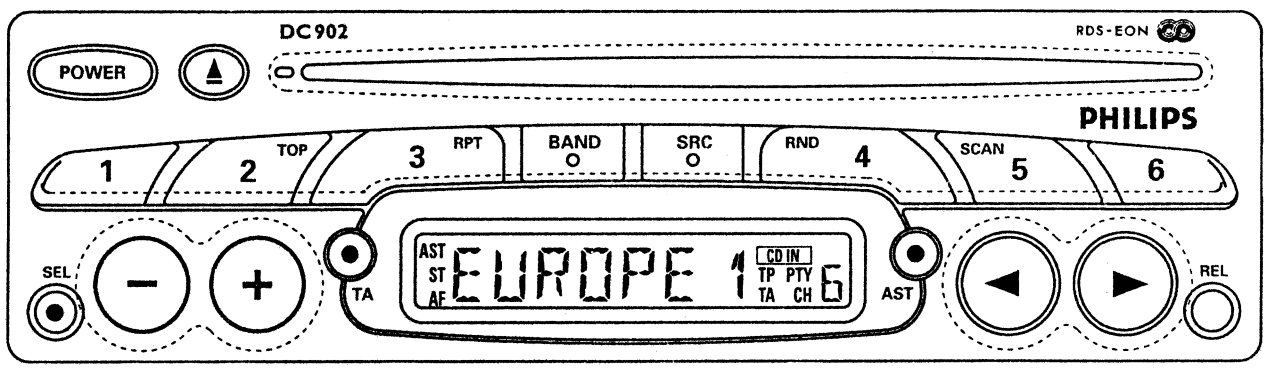


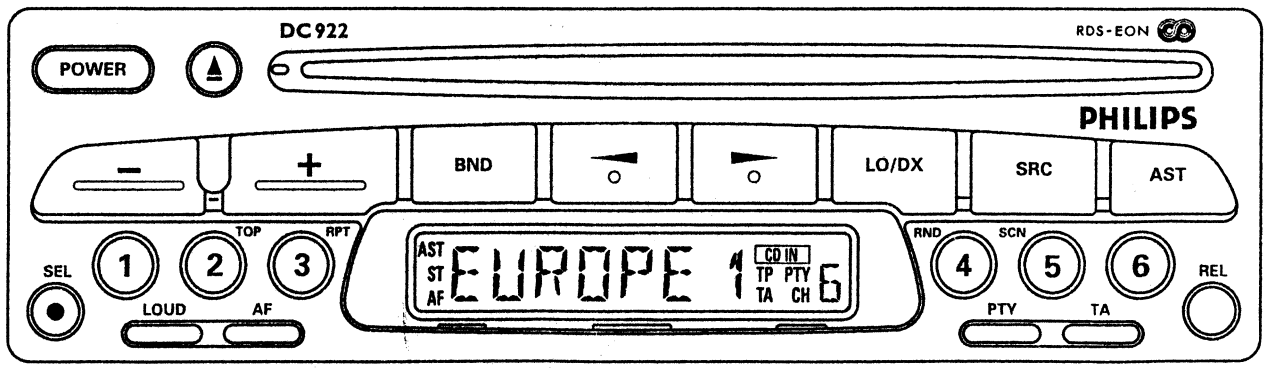


COMPACT disc DIGITAL AUDIO

CLASS 1 LASER PRODUCT

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## TECHNICAL DATA

### GENERAL

| | |
|---|---|
| Power supply: | 10.8 - 15.6 V |
| Quiescent current: | ≤ 4.5 mA (at 12.6V) |
| Maximum current: | 7 A |

### TUNER

| | | |
|---|---|---|
| FM EUROPE | 87.5 - 108 MHz | grid: 50 kHz |
| FM USA | 87.9 - 107.9 MHz | grid: 100 kHz |
| MW EUROPE | 531 - 1629 kHz (565 - 184 m) | grid: 9 kHz auto / 1 kHz man. |
| AM USA | 530 - 1710 kHz (566 - 175 m) | grid: 10 kHz auto / 1 kHz man. |
| LW | 144 - 288 kHz(2083 - 1042 m) | grid:1kHz auto/man. |

*Note: no LW in 'USA' wave band mode*

| | |
|---|---|
| IF (FM / AM): | 10.7 MHz |
| Tuning system: | PLL quartz digital tuning |
| Tune search time: | FM: 12 seconds / MW/LW: 16 seconds |
| - 3 dB: | 5.62 µV |
| FM sens. 30 dB S/N: | ≤ 5 µV |
| MW sens. 26 dB S/N: | ≤ 56.2 µV |
| LW sens. 26 dB S/N: | ≤ 126 µV |
| SNR FM: | ≥ 50 dB |
| SNR AM: | ≥ 45 dB |

### CDM9 CD PLAYER

| | |
|---|---|
| Frequency response: | 30 - 16,000 Hz |
| SNR: | ≥ 75 dB |
| Distortion: | 0.5% at 1 kHz |
| Channel crosstalk: | -30 dB at 1 kHz |



## TECHNICAL DATA (cont'd)

### AMPLIFIER

| | |
|---|---|
| Output: | 4 x 7 W (4-ch.) / 2 x 20 W (2-ch.) |
| Bass: | +/- 12 dB (100 Hz) |
| Treble: | +/- 12 dB (10 kHz) |
| Channel separation: | > 40 dB |
| Line out: | 500 mV ± 2 dB |
| Loudness: | +10 dB at 100 Hz / +6 dB at 10 kHz |

## FUNCTION DIFFERENCES OVERVIEW

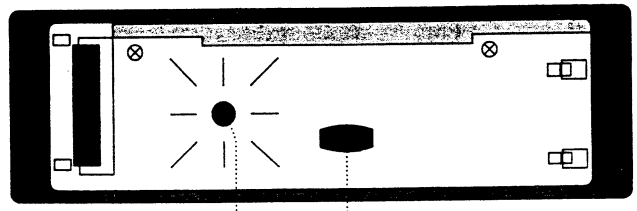
| Function | DC902/00 | DC902/10 | DC922/00 | DC922/10 |
|---|---|---|---|---|
| FM wave band | Y | Y | Y | Y |
| MW wave band | N | Y | Y | Y |
| LW wave band | N | N | Y | N |
| Stereo / Mono switch | Auto | Y | Auto | Y |
| Mute switch | N | N | N | Y |
| Line out | N | 2 ch. | 2 ch. | 4 ch. |
| Traffic Announcement | Y | N | Y | N |
| Wave band scan | N | Y | N | Y |
| RDS | Y | N | Y | N |
| AF | N | N | Y | N |
| PTY function | N | N | Y | N |
| Illumination colour | OR | GR | OR | GR |

Y=inserted; N=not inserted; OR=orange; GR=green

The DC922/80 is similar to the DC922/00, with green lighting instead of orange.

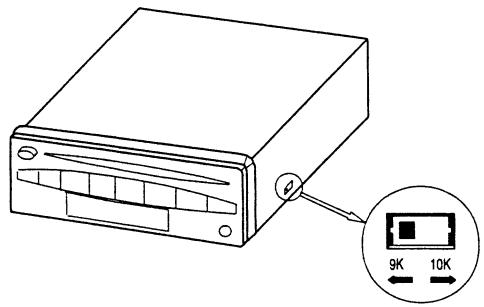
## WARNING LED

When the front detach unit is removed, the red LED flashes to indicate that the set is protected. See figure below.



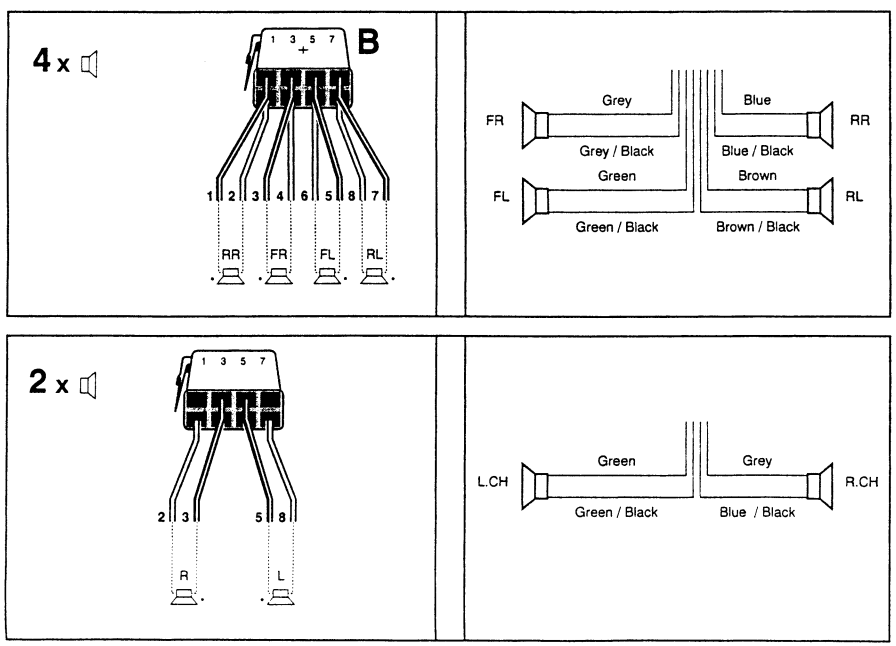
## EUROPE / USA WAVE BAND SWITCH

With this set it is possible to select either the European or USA wave bands.
This can be done by setting the '9kHz/10kHz' switch in the right position.
See figure below.
When the '9kHz' position is selected, then the European wave bands are selected. In the '10kHz' position, the USA wave bands are selected.
Refer to the 'Technical specifications' part for an exact overview of frequency ranges and -steps (grid).




## SPEAKER CONNECTIONS

Depending on either 2- or 4-channel operation the speakers must be connected to the '**B**' connector of the wire assy as shown in the figure below.

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## DC902 CONTROLS (continued)

Function:

Release front detach unit

UP key:

| | |
|---|---|
| *Radio operation:* | Increase frequency |
| *Radio PTY operation:* | Select program type |
| *CD operation - short press:* | Next track |
| *CD operation - long press:* | Search forward |
| *In combination with DOWN key:* | Toggle between AUTO/MANUAL tuning |
| *Initializing mode:* | Select parameter |

DOWN key:

| | |
|---|---|
| *Radio operation:* | Decrease frequency |
| *Radio PTY operation:* | Select program type |
| *CD operation - short press:* | Previous track |
| *CD operation - long press:* | Search backward |
| *In combination with UP key:* | Toggle between AUTO/MANUAL tuning |
| *Initializing mode:* | Select parameter |

Auto STore - store automatically 6 strongest stations on F(M)3 or MW2/AM2 wave band (*note: MW2/AM2 only for DC902/10*)

Traffic Announcement (TA) (For DC902/00):
*Short press:* TA on/off
*Long press:* Regional program reception on/off;
Scan (*Radio operation*) on/off (For DC902/10)
(during scan each station is heard for 10 seconds)

Increase Volume, Bass or Treble, Balance to Right and Fader to Front

Decrease Volume, Bass or Treble, Balance to Left and Fader to Rear

| | |
|---|---|
| *Short press:* | Select audio function (Volume, Bass, Treble, Balance or Fader) |
| *Long press:* | Select 'Initializing mode' |

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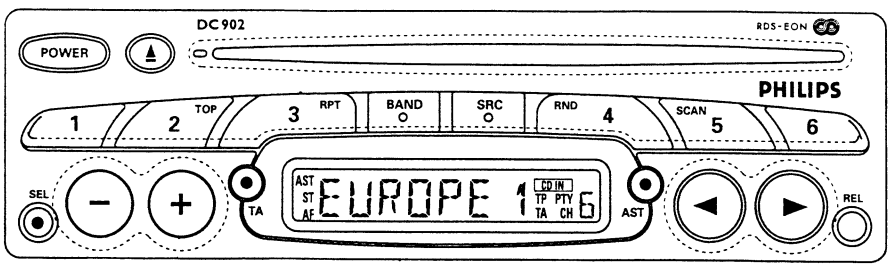
## DC902 FRONT

*(Note: The DC902/00 front is shown in the figure)*

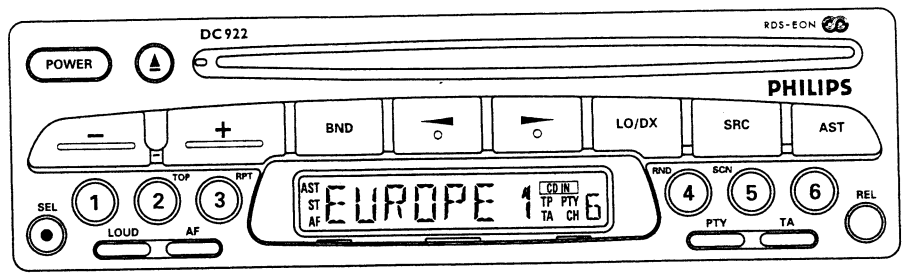



## DC902 CONTROLS

| | Function: |
|---|---|
| **POWER** | On/Off (push) |
| ⏏ | CD eject button |
| | CD opening indicator |
| 1 2 TOP 3 RPT | Preset buttons 1..3: |
| | *Radio operation short press:* Select station presets 1..3<br>*Radio operation long press:* Store station presets 1..3<br>*CD operation:* Preset 2: Top (First track) select<br>Preset 3: Repeat track on/off |
| **BAND** | *Radio operation:* Select wave band<br>*Initializing mode:* 2 channel mode <> 4 channel mode;<br>Loudness off <> Loudness on;<br>TA volume level: -2..-1..0..+1..+2 |
| **SRC** | Select source (Radio / CD operation) |
| 4 RND 5 SCAN 6 | Preset buttons 4..6: |
| | *Radio operation - short press:* Select station presets 4..6<br>*Radio operation - long press:* Store station presets 4..6<br>*CD operation:* Preset 4 - Random (shuffle) mode on/off<br>Preset 5 - Scan on/off |

## DC922 FRONT

*(Note: The DC922/00/80 front is shown in the figure)*




## DC922 CONTROLS

| | Function: |
|---|---|
| **POWER** | On/Off (push) |
| – | Decrease Volume, Bass or Treble, Balance to Left and Fader to Rear |
| ⏏ | CD eject button |
| | CD opening indicator |
| + | Increase Volume, Bass or Treble, Balance to Right and Fader to Front |
| **BND** | *Radio operation:* Select wave band<br>*Initializing mode:* 2 channel mode <> 4 channel mode;<br>Loudness off <> Loudness on;<br>TA volume level: -2..-1..0..+1..+2 |
| ◁ | *Radio operation:* Decrease frequency<br>*Radio PTY operation:* Select program type<br>*CD operation - short press:* Previous track<br>*CD operation - long press:* Search backward<br>*In combination with ▷ key:* Toggle between AUTO/MANUAL tuning<br>*Initializing mode:* Select parameter |
| ▷ | *Radio operation:* Increase frequency<br>*Radio PTY operation:* Select program type<br>*CD operation - short press:* Next track<br>*CD operation - long press:* Search forward<br>*In combination with ◁ key:* Toggle between AUTO/MANUAL tuning<br>*Initializing mode:* Select parameter |
| **LO/DX** | Select sensitivity between LOcal and Distant broadcasting stations |



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| | Function: |
|---|---|
| **SRC** | Select source (Radio / CD operation) |
| **AST** | Auto STore - store automatically 6 strongest stations on F(M)3 or MW2/AM2 wave band |
| REL | Release front detach unit |
| RND SCN | Preset buttons 4..6:<br>*Radio operation - short press:* Select station presets 4..6<br>*Radio operation - long press:* Store station presets 4..6<br>*CD operation:* Preset 4 - Random (shuffle) mode on/off<br>Preset 5 - Scan on/off |
| PTY SCAN | Program TYpe (PTY) (For DC922/00/80):<br>*Short press:* Select or leave PTY mode<br>*Long press:* Search for PTY station;<br>Scan (*Radio operation*) on/off (For DC922/10)<br>(during scan each station is heard for 10 seconds) |
| TA ST/MO | Traffic Announcement (TA) (For DC922/00/80):<br>*Short press:* TA on/off<br>*Long press:* Regional program reception on/off;<br>STereo / MOno (For DC922/10) |
| TOP RPT | Preset buttons 1..3:<br>*Radio operation short press:* Select station presets 1..3<br>*Radio operation long press:* Store station presets 1..3<br>*CD operation:* Preset 2: Top (First track) select<br>Preset 3: Repeat track on/off |
| AF MUTE | Search for Alternative Frequency (For DC922/00/80);<br>Mute (For DC922/10) |
| LOUD | *Short press:* Loudness on/off<br>*Long press:* Reset Bass, Treble, Balance and Fader in their centre position |
| SEL | *Short press:*<br>Select audio function (Volume, Bass, Treble, Balance or Fader)<br>*Long press:* Select 'Initializing mode' |

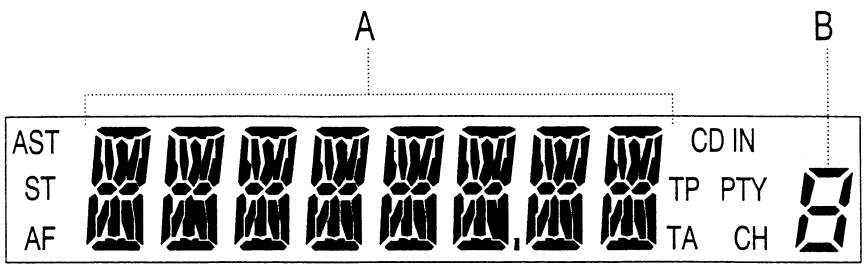






| DISPLAY PART (refer to figure): | MEANING: | MODE: |
|---|---|---|
| REG ON | Regional program reception enabled | RADIO |
| REG OFF | Regional program reception disabled | |
| STEREO | Stereo reception enabled | RADIO / FM |
| MONO | Mono reception enabled<br>(*Note: only for non-RDS sets*) | |
| BASS + 12 | Bass boost of +12 dB | ADJUST |
| TREB — 6 | Treble reduction of -6 dB | |
| TREB 0 | Treble at normal level | |
| BAL 0 — — | Right channel off | ADJUST |
| BAL 0 — 10 | Right channel -10 dB with respect to left channel | |
| BAL 0 0 | Balance in centre position | |
| BAL — 8 0 | Left channel -8 dB with respect to right channel | |
| BAL — — 0 | Left channel off | |
| FDR 0 — — | Front channel off | ADJUST |
| FDR 0 — 6 | Front channel -6 dB with respect to rear channel | |
| FDR 0 0 | Fader in centre position | |
| FDR — 12 0 | Rear channel -12 dB with respect to front channel | |
| FDR — — 0 | Rear channel off | |
| RESET | Bass, treble, balance and fader in centre position | ADJUST |
| LOUD ON | Loudness switched on | ADJUST<br>INIT |
| LOUD OFF | Loudness switched off | ADJUST<br>INIT |
| 1 0.06 | Track 1 reproduced; elapsed time of 6 seconds | CD |
| SCAN 3 | Scanning mode enabled; track 3 scanned | |
| REP 4 | Track 4 repeated | |
| RND 1 | Random (shuffle) play enabled; track 1 reproduced | |
| CD ERROR | CD inserted in the wrong way or CD is damaged or dirty | CD |
| TOO HOT | Temperature inside set has exceeded its maximum allowed value | |
| 4 SPKRS | 4-channel mode selected | INIT |
| 2 SPKRS | 2-channel mode selected | |
| TA LVL 0 | TA volume level normal level (range -2...+2) | INIT |
| **B** | 7-segment digit indicating preset station number (1..6) (together with **CH** indication) | RADIO |

## DISPLAY INDICATIONS




| DISPLAY PART (refer to figure): | MEANING: | MODE: |
|---|---|---|
| **A** (Alpha-numeric display): | | |
| *Note: all numbers, values and station names shown here are examples !* | | |
| LW 162 | LW band (Europe wave band) selected; reception freq. 162 kHz | RADIO |
| MW1 612 | MW band 1 (Europe wave band) selected; reception freq. 612 kHz | |
| MW2 1440 | MW band 2 (Europe wave band) selected; reception freq. 1440 kHz | |
| AM1 611 | AM (MW) band 1 (USA wave band) selected; reception freq. 611 kHz | |
| AM2 1436 | AM (MW) band 2 (USA wave band) selected; reception freq. 1436 kHz | |
| F3 87.5 | FM band 3 selected; reception freq. 87.5 MHz | |
| RADIO 2 | Station name (shown in RDS mode) | RADIO |
| STORE | Stations stored (in AST mode) on F3 or MW2/AM2 band | RADIO / AST |
| AUTO | Auto (search) tuning | RADIO |
| MANUAL | Manual tuning | |
| LOCAL | Only strongest (local) stations reception (lower sensitivity) | RADIO |
| DX | Also weaker (distant) stations reception (higher sensitivity) | |
| NEWS | News program type selected | RADIO / PTY |
| AFFAIRS | 'Current affairs' program type selected | |
| INFO | Information program type selected | |
| SPORT | Sport program type selected | |
| EDUCATE | Education program type selected | |
| DRAMA | 'Drama' program type selected | |
| CULTURE | Culture program type selected | |
| SCIENCE | Scientific program type selected | |
| VARIED | Variety program type selected | |
| POP M | Pop music program type selected | |
| ROCK M | Rock music program type selected | |
| MOR M | 'Middle-of-the-Road' music program type selected | |
| LIGHT M | Light classical music program type selected | |
| CLASSIC | 'Serious' classical music program selected | |
| OTHER M | 'Other music' program type selected | |
| NO PTY | Station does not broadcast program type information | RADIO / PTY |
| ALARM | Emergency message broadcasted by PTY station | |
| TRAFFIC | (In combination with station name) AF station broadcasts TA info | |



## DISPLAY INDICATIONS (continued)

| DISPLAY PART (refer to figure): | MEANING: | MODE: |
|---|---|---|
| **AST** | Auto-STore mode;<br>6 strongest stations stored automatically on F3 or MW2/AM2 band | RADIO |
| **ST** | Stereo reception | RADIO / FM |
| **AF** | Alternative Frequency station (with the best reception) selected | RADIO / RDS |
| **CD IN** | CD is inserted | |
| **TP** | Traffic Program station received | RADIO |
| **TP** (*blinking*) | Received station does not broadcast traffic info or is too weak (when TA mode is enabled) | |
| **PTY** | Program TYpe station reception;<br>Program type can be selected; display shows selected program type | RADIO / PTY |
| **TA** | Set is ready to receive Traffic Announcements | RADIO |
| | CD playback is interrupted during TA reception | CD |
| **CH** | (In combination with digit 1..6) Preset station selected | RADIO |

**NOTES:**

- For informations about how to use the set see the 'Operating Instructions'.
- The handling of flat pack ICs is described in Service Information A86-100, dated 1986-07-01.
- Switch off power supply before connecting or disconnecting the CD deck.
- Do not try to load or eject a CD when the CD deck is in upside-down position.
- Extension cables for front unit and CD deck are NOT available as service parts.
- For more information about the RDS feature use the 'computer based training course RDS', which is available at Philips Consumer Service.
  Contact: Philips Consumer Electronics
  Service Dept. B.G. Audio
  Building SFF3
  NL 5600 MD Eindhoven

  tlx routing indicator: NLMEVAB

  FAX: + 31 40 273 40 50

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## CHECKS

*Notes:*

- *See for more information the 'General Alignment Procedure' manual*
- All measurements have to be carried out at pins 1, 3, 5 and 7 of cable assy connector 'B'

| Check | Band | ⊛— | ◈ | ℄ | Settings | 📻 |
|---|---|---|---|---|---|---|
| 30dB SNR | FM | 98.0MHz; 5µV<br>Δf=22.5kHz<br>$f_{mod}$=1kHz<br><br>98.0MHz; 5µV<br>Δf=22.5kHz<br>without mod. | ◈ | ▭ | ◿ | 0dB (775mV)<br><br>≤ -30dB |
| 26dB SNR | MW | 1053kHz;<br>56.2µV<br>$f_{mod}$=400Hz;<br>30%<br><br>1053kHz;<br>56.2µV<br>without mod. | ◈ | ▭ | ◿ | 0dB (775mV)<br><br>≤ -26dB |
| 26dB SNR | LW | 206kHz; 126µV<br>$f_{mod}$=400Hz;<br>30%<br><br>206kHz; 126µV<br>without mod. | ◈ | ▭ | ◿ | 0dB (775mV)<br><br>≤ -26dB |
| SNR FM | FM | 98.0MHz; 1mV<br>Δf=22.5kHz<br>$f_{mod}$=1kHz<br><br>98.0MHz; 1mV<br>Δf=22.5kHz<br>without mod. | ◈ | ▭ | ◿ | 0dB (775mV)<br><br>≤ -50dB |
| SNR MW | MW | 1053kHz; 5mV<br>400Hz; 30%<br><br>1053kHz; 5mV<br>without mod. | ◈ | ▭ | ◿ | 0dB (775mV)<br><br>≤ -45dB |
| SNR LW | LW | 206kHz; 5mV<br>400Hz; 30%<br><br>206kHz; 5mV<br>without mod. | ◈ | ▭ | ◿ | 0dB (775mV)<br><br>≤ -45dB |
| α -3dB | FM | 98.0MHz; 1mV<br>Δf=22.5kHz<br>$f_{mod}$=1kHz<br><br>98.0MHz;<br>5.62mV<br>Δf=22.5kHz<br>$f_{mod}$=1kHz | ◈ | ▭ | ◿ | 0dB (775mV)<br><br>-3dB |





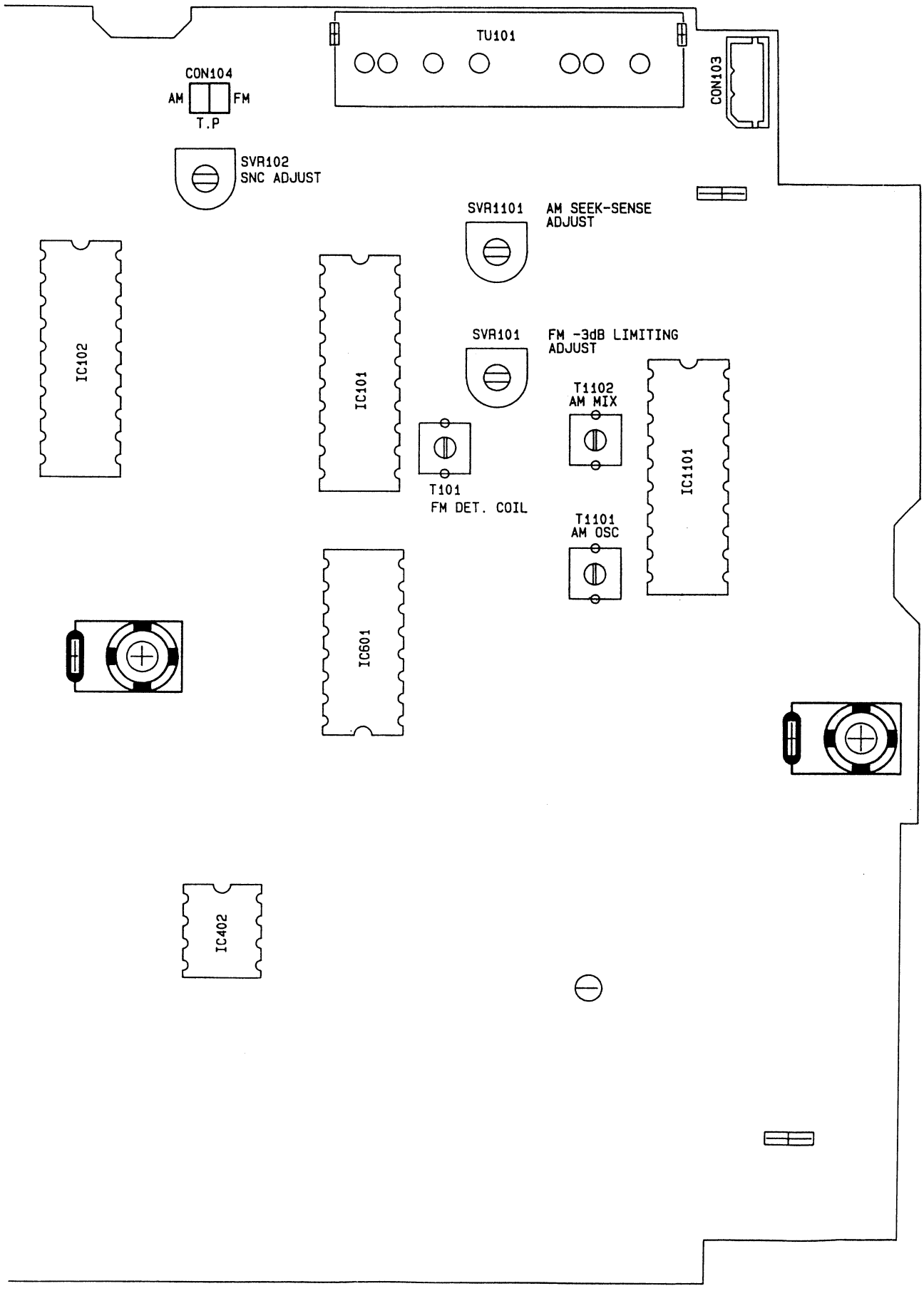
*Notes:*

- *For adjustments and checks use the dummy aerial as shown in the figure below.*
- Refer to the location of the adjustment controls on this page

| Adjustment | Band | ⊛— | ◈ | ℄ | ◇ | 📻 |
|---|---|---|---|---|---|---|
| α -3dB | FM | 98.0MHz; 1mV<br>Δf=22.5kHz<br>$f_{mod}$=1kHz<br><br>98.0MHz;<br>7-10µV<br>Δf=22.5kHz | ◈ | SVR101 | Connector block (B)<br>pins 1,3,5,7 | 775mV (0dB)<br>Reference level (dB)<br><br>Reference level -3dB |
| Channel separation / SDS (SNC) | FM | 98.0MHz; 1mV<br>Δf=22.5kHz<br>$f_{mod}$=400Hz<br>(Stereo)<br>Pilot 10%<br><br>98.0MHz; 150µV<br>Δf=22.5kHz<br>$f_{mod}$=1kHz<br>(Left ch. only)<br>Pilot 10% | ◈ | SVR102 | Connector block (B)<br>pins 1,3,5,7<br><br>Connector block (B)<br>pins 1,3 (R) | 775mV (0dB)<br><br>≤ 10dB with resp. to L |
| Search sensitivity | AM | 999kHz; 56.2µV | ◈ | SVR1101 | Conn.104 - left pin | 1.6VDC |
| FM detect | FM | 98.0MHz; 10µV<br>Δf=75.0kHz<br>$f_{mod}$=1kHz | ◈ | T101 | Connector block (B)<br>pins 1,3,5,7 | Adjust for minimum THD |

**Check -3dB again and adjust if necessary !**
**Do NOT adjust coils T1101 and T1102 (AM part) because they are correctly pre-adjusted by supplier !**

*(Part of main PCB)*

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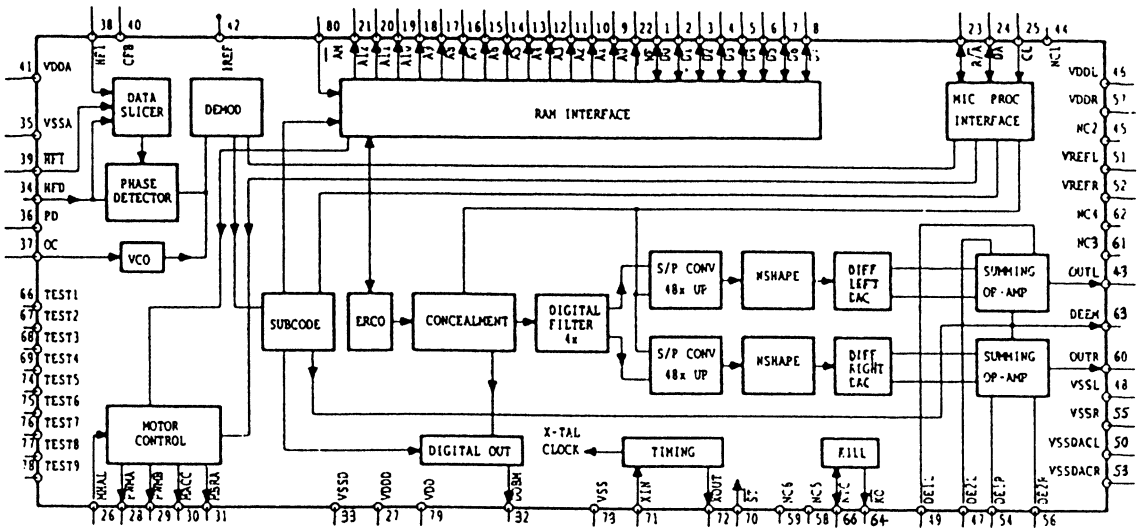
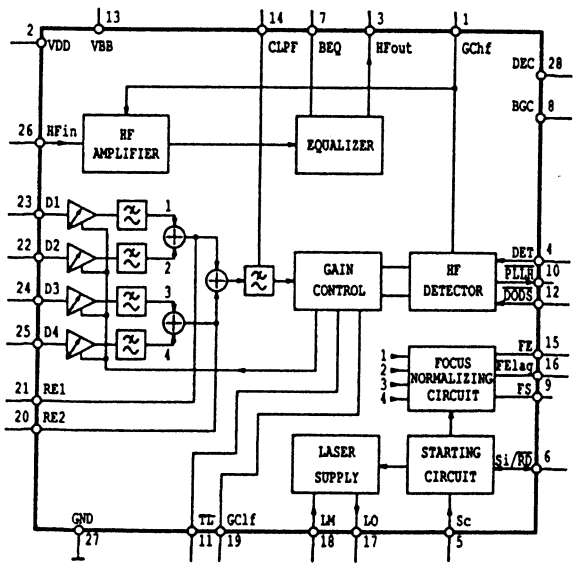
## IC PIN ALLOCATIONS AND FUNCTIONS

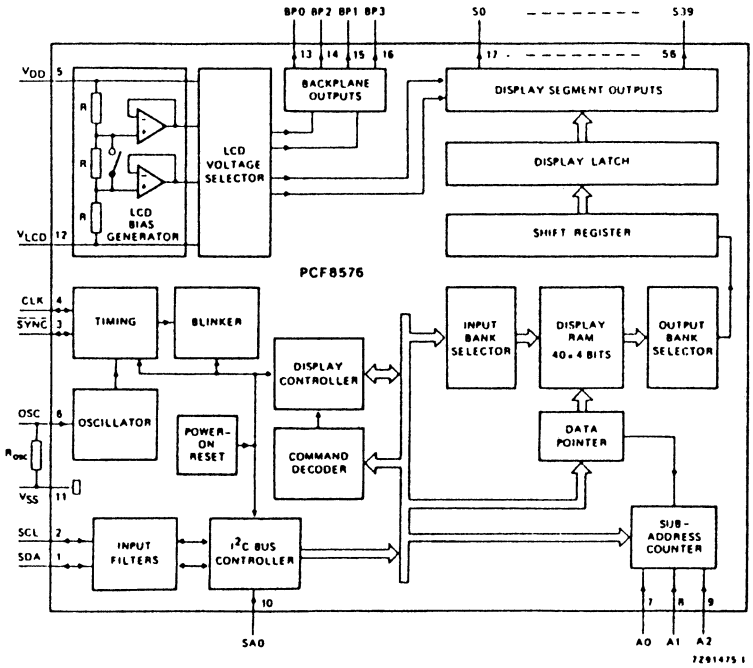
### SAA7341



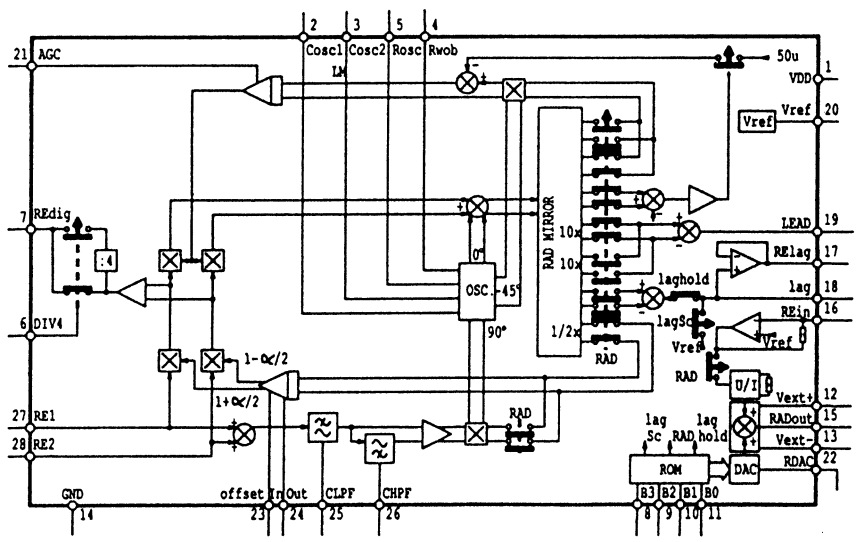

### TDA8808T



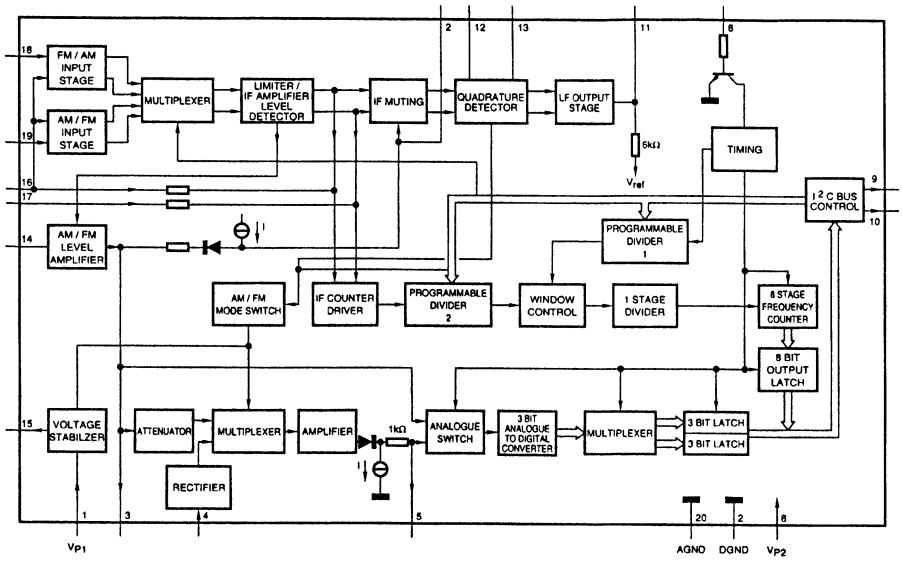
## PCF8576



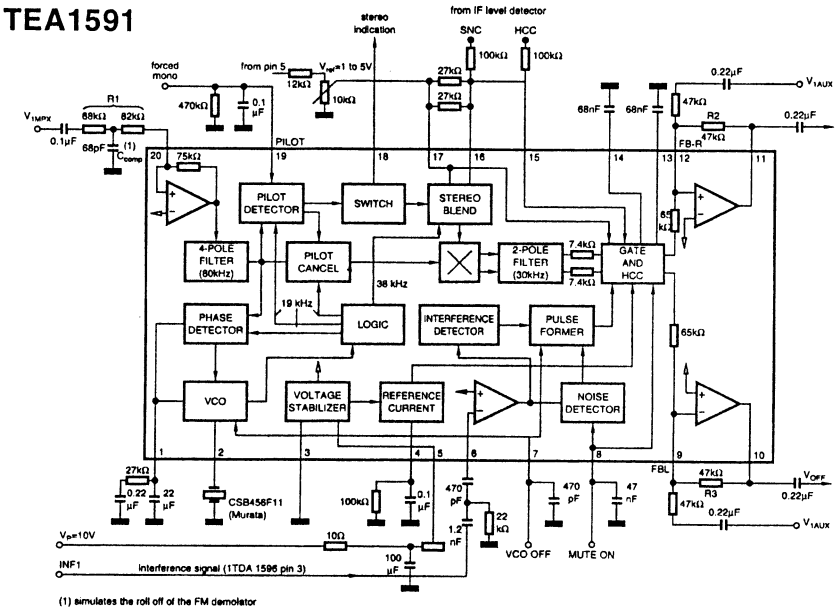

## TDA8809T



## TEA6100

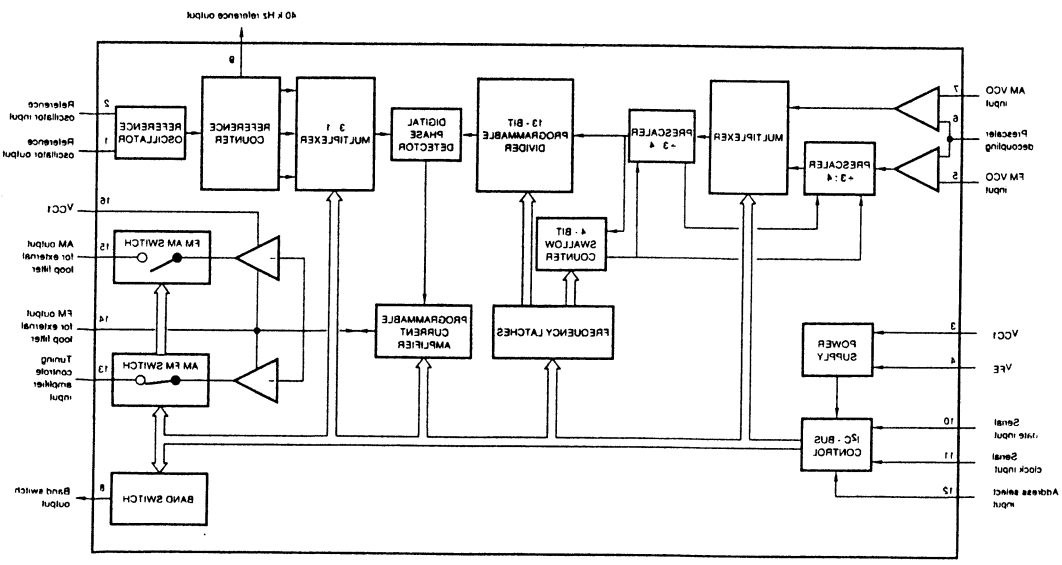



## TEA1591

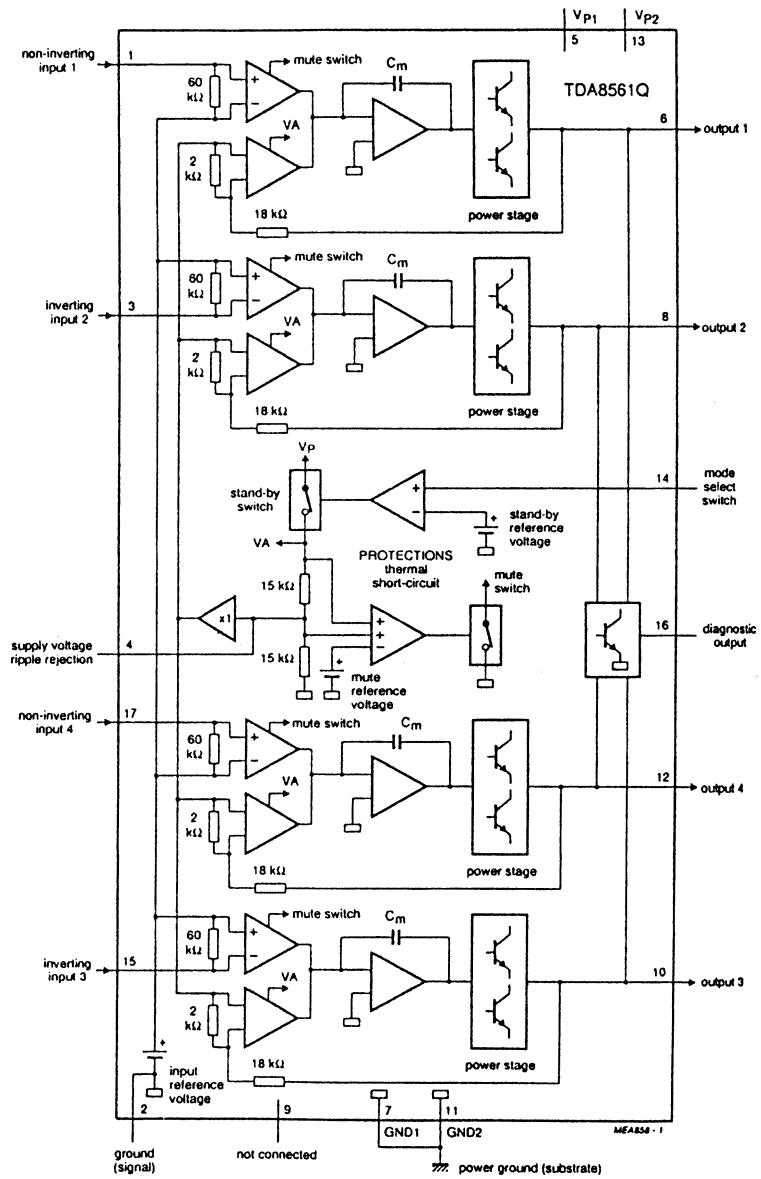


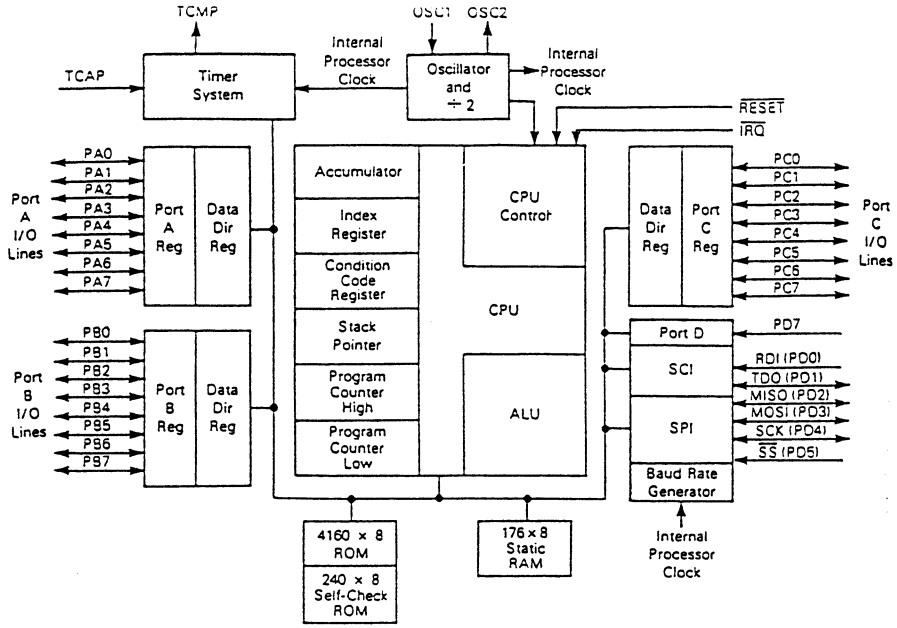

(1) simulates the roll off of the FM demodulator

## TSA6057T

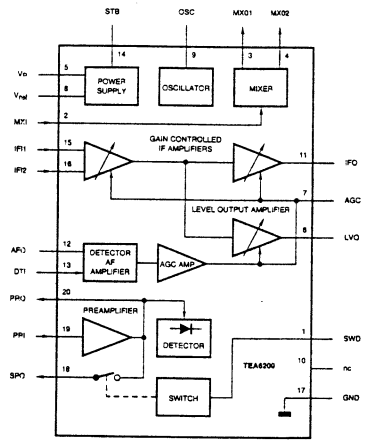



CL 56600011_015a.AI
011295

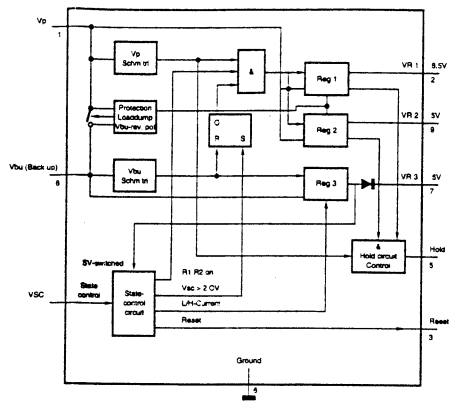

TDA8561Q
$V_{P1}$
$V_{P2}$
5
13
non-inverting input 1
1
mute switch
$C_m$
60 kΩ
VA
2 kΩ
18 kΩ
power stage
6
output 1
inverting input 2
3
8
output 2
$V_P$
stand-by switch
14
mode select switch
stand-by reference voltage
PROTECTIONS
thermal
short-circuit
mute switch
15 kΩ
x1
supply voltage ripple rejection
4
mute reference voltage
16
diagnostic output
non-inverting input 4
17
12
output 4
inverting input 3
15
10
output 3
input reference voltage
2
9
7
11
GND1
GND2
MEA858 - 1
ground (signal)
not connected
power ground (substrate)




**TEA6200**




**TDA3602**




CL 56600011_015.AI
.011295

## VOLTAGE MEASUREMENT TABLES

### 1. TR / FET

| TR NO / TERMINAL | Q101 | Q102 | Q103 | Q104 | Q105 | Q106 | Q107 | Q108 | Q201 | Q202 | Q501 | Q502 | Q503 | Q504 | Q505 | Q506 | Q507 | Q508 | Q509 | Q510 | Q511 | Q512 | FT1101 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C (D) | 7.3V | 1.4V | 3.7V | 8.3V | 2.1V | 0V | 0V | 3.0V | 2.6V | 0V | 14.0V | 0V | 0V | 0V | 14.0V | 14.0V | 0V | 0.3V | 14.0V | 0V | 0.6V | 0V | 7.9V |
| B (G) | 0.9V | 3.1V | 0V | 3.7V | 2.1V | 2.5V | 2.5V | 0V | 0.3V | 2.5V | 4.9V | 0V | 0V | 3.8V | 0V | 0V | 3.8V | 14.0V | 13.6V | 0.6V | 14.0V | 4.9V | 0V |
| E (S) | 0V | 3.7V | 0V | 3.1V | 0V | 0V | 0V | 0V | 0V | 2.6V | 0V | 0V | 0V | 0V | 0.6V | 0V | 0V | 14.0V | 14.0V | 0V | 14.0V | 4.9V | 0V |

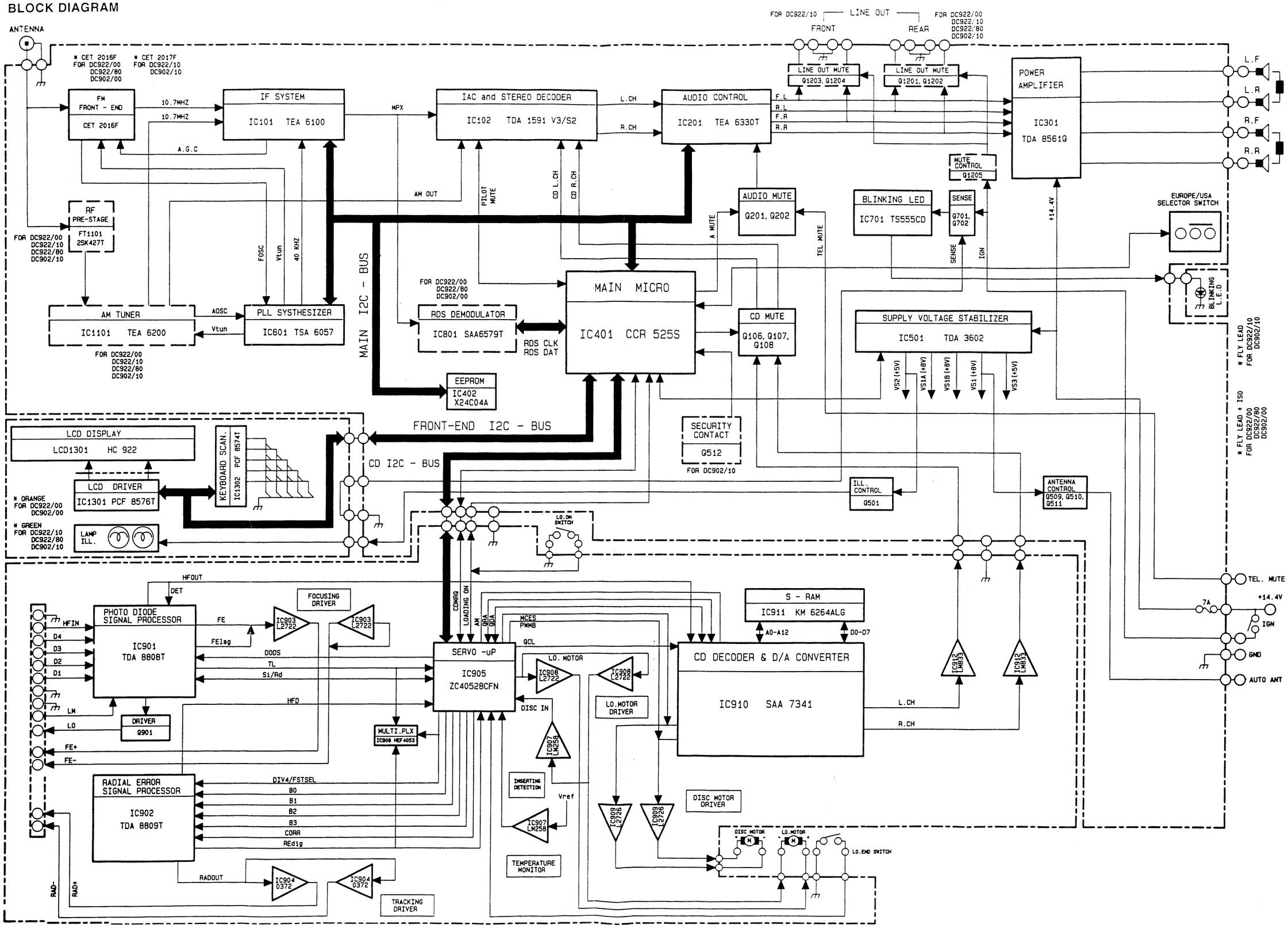
| TR NO / TERMINAL | Q701 | Q702 | Q901 | Q902 | Q903 | Q904 | Q905 | Q906 | Q1201 | Q1202 | Q1203 | Q1204 | Q1205 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C (D) | 4.9V | 0V | 0.9V | 0V | 1.1V | 0.9V | 0.4V | 0.4V | 1.6V | 1.6V | 1.6V | 1.6V | 1.0V |
| B (G) | 0.2V | 3.0V | 1.3V | 5.5V | 0.4V | 0.4V | 0.9V | 0.4V | 1.3V | 1.3V | 1.3V | 1.3V | 11.9V |
| E (S) | 0V | 0V | 1.0V | 1.0V | 0.5V | 0V | 0.9V | 0.4V | 0V | 0V | 0V | 0V | 10.1V |

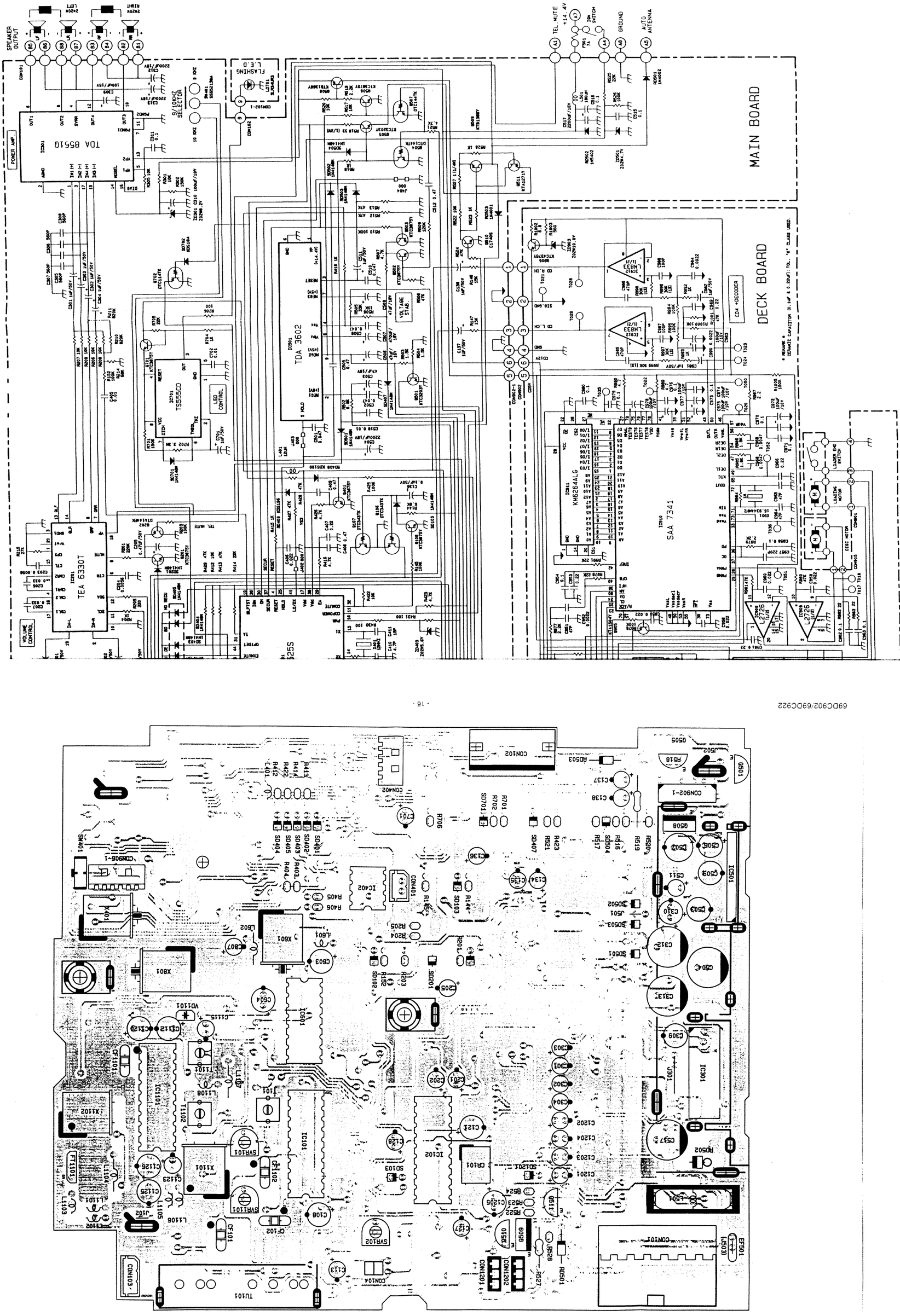
## 2. IC

| IC NO \ PIN NO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | IC NAME |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IC 101 | 8.1V | 0.5V | 3.0V | 0V | 0V | 0V | 0V | 8.2V | 4.3V | 4.5V | 0.5V | 4.5V | 4.5V | 3.4V | 4.3V | 2.9V | 2.9V | 2.9V | 2.9V | 0V | | | | | | | | | | | | | | | | | | | | | | TEA 6100 |
| IC 102 | 4.8V | 4.3V | 0V | 3.0V | 8.2V | 2.2V | 2.1V | 3.1V | 3.8V | 3.7V | 3.7V | 3.8V | 1.3V | 1.3V | 1.0V | 0.7V | 0.5V | 0.3V | 1.4V | 3.0V | | | | | | | | | | | | | | | | | | | | | | TDA 1591 |
| IC 201 | 6.5V | 3.2V | 0V | 3.2V | 3.2V | 3.2V | 2.7V | 3.2V | 2.6V | 0V | 4.9V | 4.9V | 3.2V | 2.7V | 3.2V | 3.2V | 3.2V | 7.7V | 3.2V | 3.2V | | | | | | | | | | | | | | | | | | | | | | TEA 6330T |
| IC 301 | 2.1V | 0V | 2.1V | 7.0V | 1.8V | 6.9V | 0V | 6.9V | 0.3V | 6.9V | 0V | 6.9V | 14.0V | 8.2V | 2.1V | 14.0V | 2.1V | | | | | | | | | | | | | | | | | | | | | | | | | TDA 8561Q |
| IC 401 | 0V | 4.9V | 4.9V | 0V | 4.6V | 0V | 0V | 2.4V | 4.9V | 4.8V | 4.4V | 2.3V | 0V | 2.4V | 2.2V | 0V | 4.9V | 4.9V | 0V | 4.9V | 4.9V | 4.9V | 4.1V | 4.1V | 4.9V | 4.9V | 1.5V | 0V | 4.9V | 0V | 4.9V | 0V | 4.9V | 4.9V | 4.9V | 3.5V | 0V | 4.9V | 0V | 4.9V | CCR 525S |
| IC 402 | 0V | 0V | 0V | 0V | 4.6V | 4.8V | 0V | 4.9V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X24C042P |
| IC 501 | 14.0V | 8.5V | 0V | 0.6V | 5.0V | 0V | 5.0V | 12.3V | 5.0V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | TDA 3602 |
| IC 601 | 1.1V | 1.1V | 4.3V | 0V | 1.7V | 1.7V | 1.7V | 0V | 0.3V | 4.6V | 4.5V | 0V | 1.6V | 2.0V | 0.9V | 8.3V | | | | | | | | | | | | | | | | | | | | | | | | | TSA 6057 |
| IC 701 | 0V | 0V | 0.2V | 0V | 0V | 0V | 0V | 0V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | TS555CD |
| IC 801 | 2.1V | 2.5V | 0.7V | 2.3V | 4.8V | 0V | 2.4V | 2.4V | 0V | 0V | 0V | 4.8V | 1.5V | 2.4V | 2.4V | 2.4V | | | | | - | | | | | | | | | | | | | | | | | | | | | SAA 6579T |
| IC 901 | 3.5V | 4.8V | 2.3V | 2.1V | 0V | 0V | 0.6V | 1.2V | 0V | 0V | 4.8V | 0V | 0V | 3.8V | 2.4V | 2.4V | 1.8V | 0V | 4.1V | 3.8V | 3.8V | 0.9V | 0.9V | 0.9V | 0.9V | 1.4V | 0V | 3.5V | | | | | | | | | | | | | TDA 8808T |
| IC 902 | 4.9V | 2.4V | 2.4V | 0V | 1.2V | 4.7V | 0V | 0V | 0V | 5.0V | 5.0V | 8.4V | 0V | 0V | 6.3V | 2.4V | 2.4V | 2.4V | 2.4V | 2.4V | 3.7V | 1.2V | 1.7V | 1.9V | 4.9V | 0.5V | 3.8V | 3.8V | | | | | | | | | | | | | TDA 8809T |
| IC 903 | 2.4V | 14.0V | 2.4V | 0V | 2.4V | 2.4V | 2.4V | 2.4V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | L 2722 |
| IC 904 | 6.2V | 14.0V | 6.3V | 0V | 6.3V | 6.3V | 6.3V | 6.3V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | TCA 0372 |
| IC 905 | 4.8V | 0V | 1.0V | 5.0V | 0V | 0V | 4.9V | 0V | 0V | 5.0V | 5.0V | 2.3V | 4.8V | 5.0V | 1.5V | 0V | 0V | 0.5V | 0V | 5.0V | 0V | 0V | 0.6V | 3.6V | 5.0V | 0V | 0V | 5.0V | 5.0V | 4.8V | 4.9V | 3.9V | 4.0V | 4.9V | 4.9V | 4.8V | 0V | 0V | 4.8V | 0.2V | ZC405258CFN |
| IC 906 | 0.5V | 0.5V | 4.8V | 4.8V | 0V | 0V | 0V | 0V | 4.7V | 0.5V | 0.5V | 0.5V | 1.1V | 1.1V | 4.9V | | | | | | | | | | | | | | | | | | | | | | | | | | | HEF4053T |
| IC 907 | 3.9V | 0.6V | 2.0V | 0V | 0.3V | 3.5V | 4.0V | 4.9V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | LM 258 |
| IC 908 | 3.6V | 14.0V | 3.5V | 0V | 3.5V | 3.5V | 3.5V | 3.6V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | L 2722 |
| IC 909 | 9.5V | 4.9V | 0V | 0V | 0V | 0V | 0V | 0.4V | 4.9V | 4.8V | 4.8V | 4.9V | 0.4V | 0V | 0V | 0V | 0V | 0.5V | 0.3V | 4.9V | | | | | | | | | | | | | | | | | | | | | | L 2726 |
| IC 910 | 3.8V | 1.2V | 3.5V | 3.0V | 2.0V | 1.4V | 1.1V | 1.5V | 1.8V | 2.0V | 1.9V | 1.7V | 1.6V | 2.3V | 2.4V | 2.4V | 2.4V | 1.8V | 1.8V | 2.0V | 1.8V | 4.0V | 1.7V | 1.8V | 5.0V | 2.3V | 2.3V | 4.9V | 4.9V | 4.9V | 4.9V | 0V | 0V | 4.8V | 0V | 0V | 0V | 2.5V | 2.4V | 2.5V | SAA 7341 |
| IC 911 | 1.8V | 2.4V | 2.4V | 2.4V | 2.3V | 1.6V | 1.7V | 1.9V | 2.0V | 1.8V | 1.7V | 1.3V | 1.3V | 0V | 3.8V | 1.1V | 3.4V | 3.0V | 2.1V | 0V | 1.9V | 0V | 1.9V | 2.0V | 1.7V | 4.8V | 4.0V | 4.9V | | | | | | | | | | | | | KM 6264 |
| IC 912 | 4.2V | 4.2V | 4.2V | 0V | 4.2V | 4.2V | 4.2V | 14.0V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | LM 833 |
| IC 1101 | 6.5V | 0V | 7.9V | 7.9V | 7.9V | 7.9V | 0.4V | 0V | 0V | 0V | 7.4V | 1.5V | 5.7V | 0V | 0V | 0V | 0V | 0V | 0.7V | 6.6V | | | | | | | | | | | | | | | | | | | | | | TEA 6200 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| IC NO \ PIN NO | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | IC NAME |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IC 101 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | TEA 6100 |
| IC 102 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | TDA 1591 |
| IC 201 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | TEA 6330T |
| IC 301 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | TDA 8561Q |
| IC 401 | 0V | 0V | 0V | 4.9V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | CCR 525S |
| IC 402 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X24C042P |
| IC 501 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | TDA 3602 |
| IC 601 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | TSA 6057 |
| IC 701 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | TS555CD |
| IC 801 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | SAA 6579T |
| IC 901 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | TDA 8808T |
| IC 902 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | TDA 8809T |
| IC 903 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | L 2722 |
| IC 904 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | TCA 0372 |
| IC 905 | 4.8V | 2.1V | 2.6V | 5.0V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | ZC405258CFN |
| IC 906 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | HEF4053T |
| IC 907 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | LM 258 |
| IC 908 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | L 2722 |
| IC 909 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | L 2726 |
| IC 910 | 5.0V | 1.5V | 1.3V | 1.1V | 1.0V | 4.9V | 2.4V | 0V | 1.0V | 0V | 2.4V | 2.4V | 0V | 1.9V | 0V | 2.4V | 4.9V | 1.9V | 0.1V | 1.0V | 1.8V | 1.8V | 0V | 4.9V | 4.9V | 2.4V | 2.3V | 2.3V | 2.3V | 5.0V | 2.0V | 1.8V | 0V | 0.4V | 4.9V | 4.9V | 4.9V | 4.9V | 4.9V | 0V | SAA 7341 |
| IC 911 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | KM 6264 |
| IC 912 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | LM 833 |
| IC 1101 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | TEA 6200 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

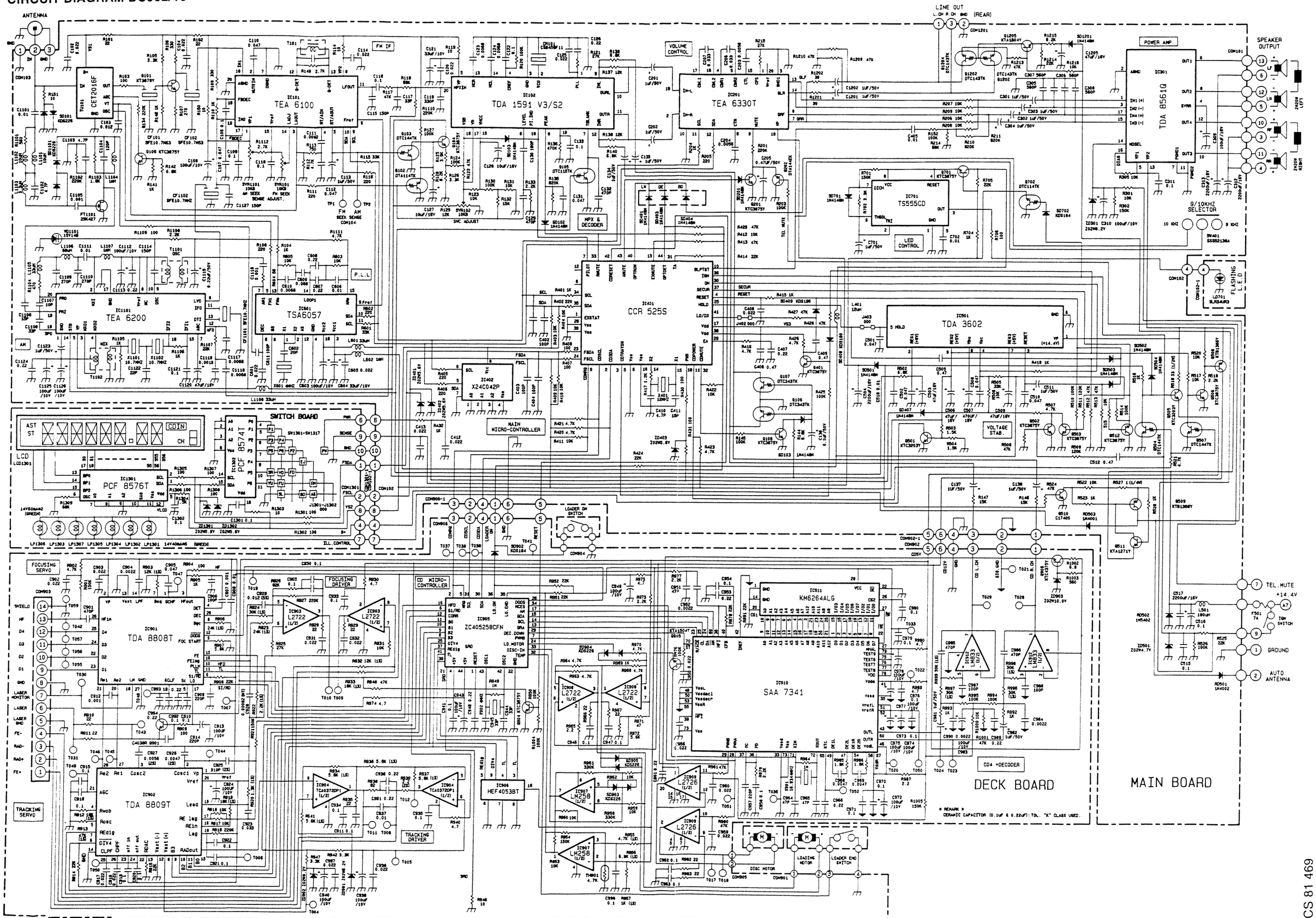
## BLOCK DIAGRAM



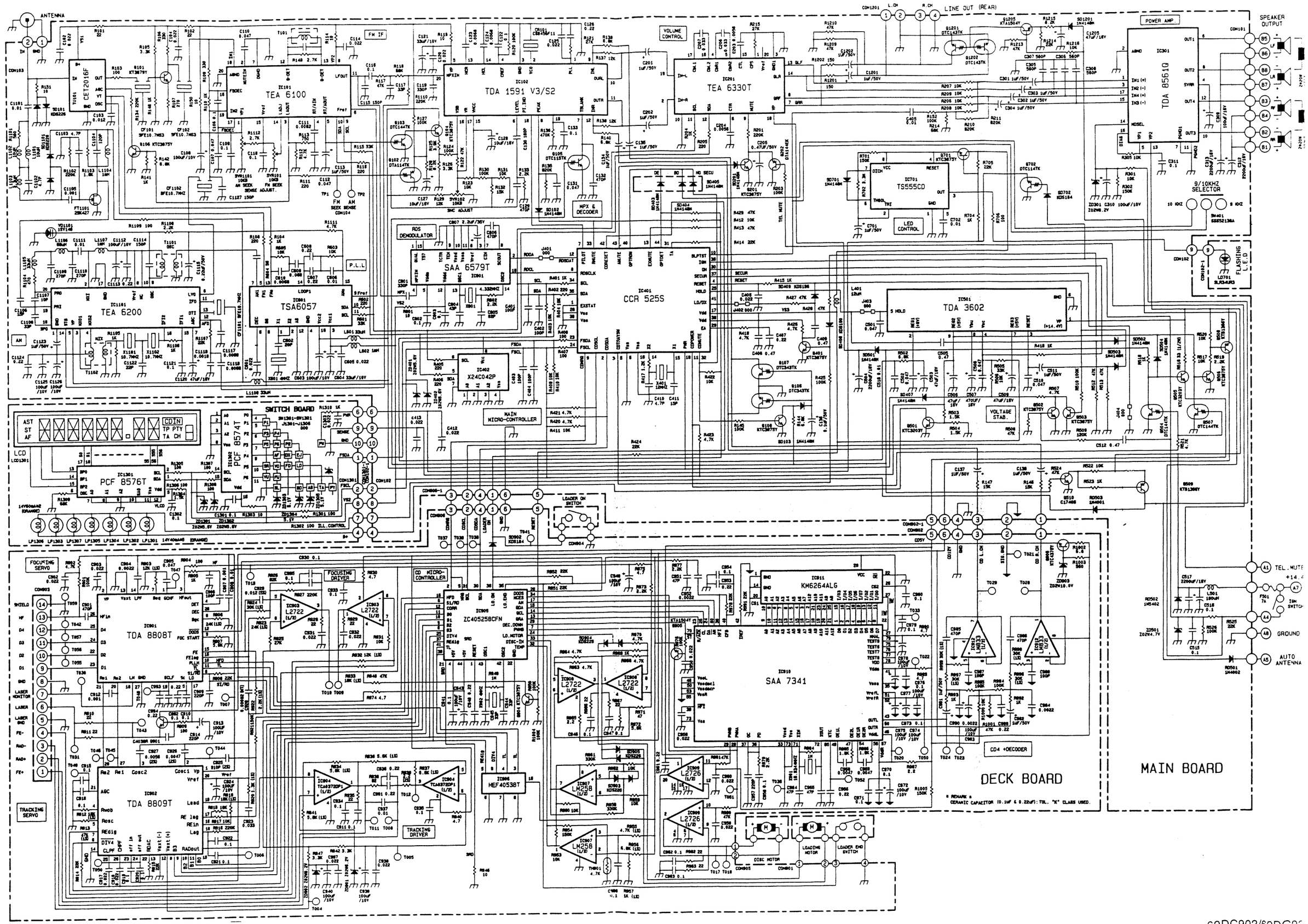



MAIN PCB LAYOUT COMPONENT SIDE

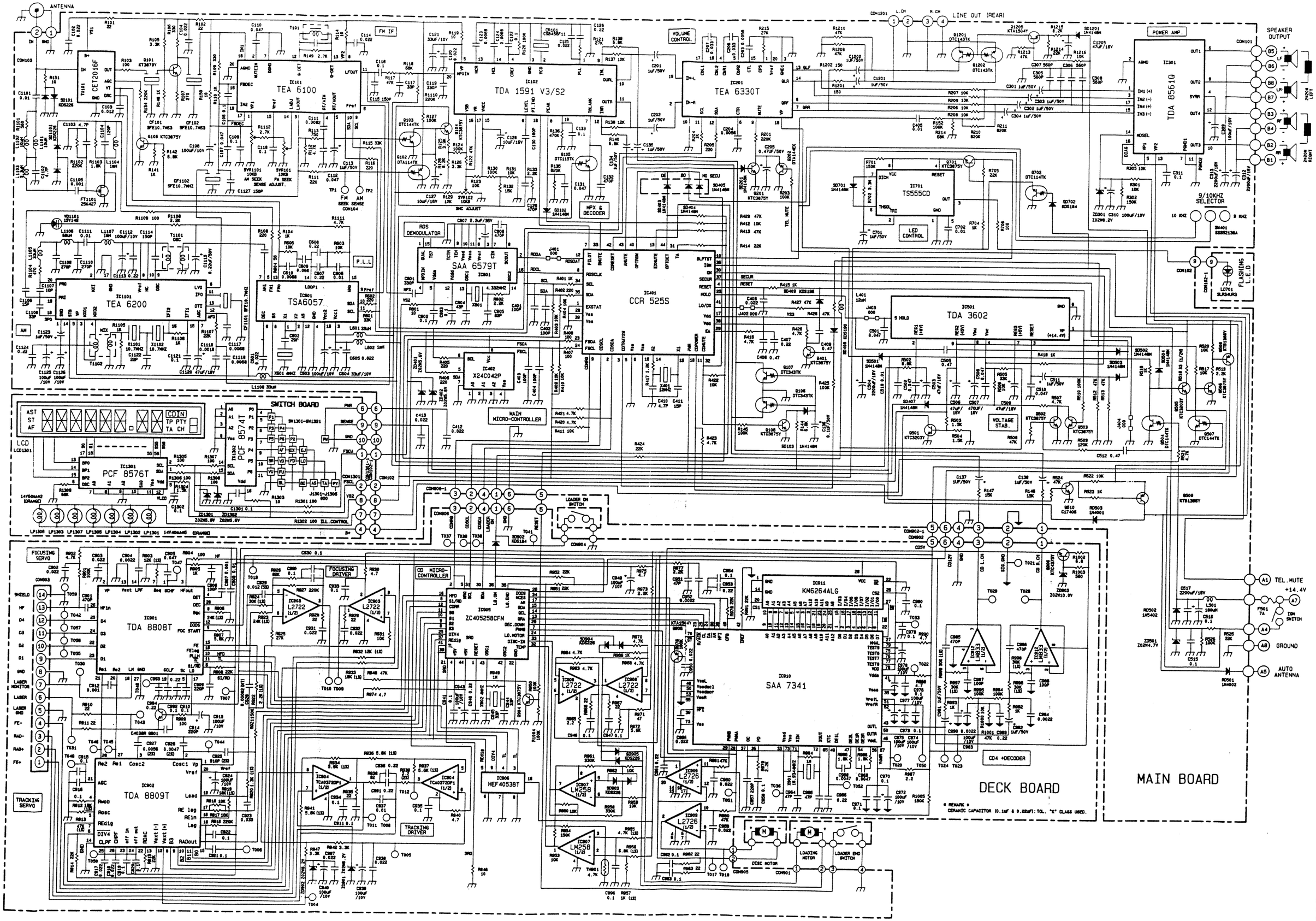
# CIRCUIT DIAGRAM DC902/10



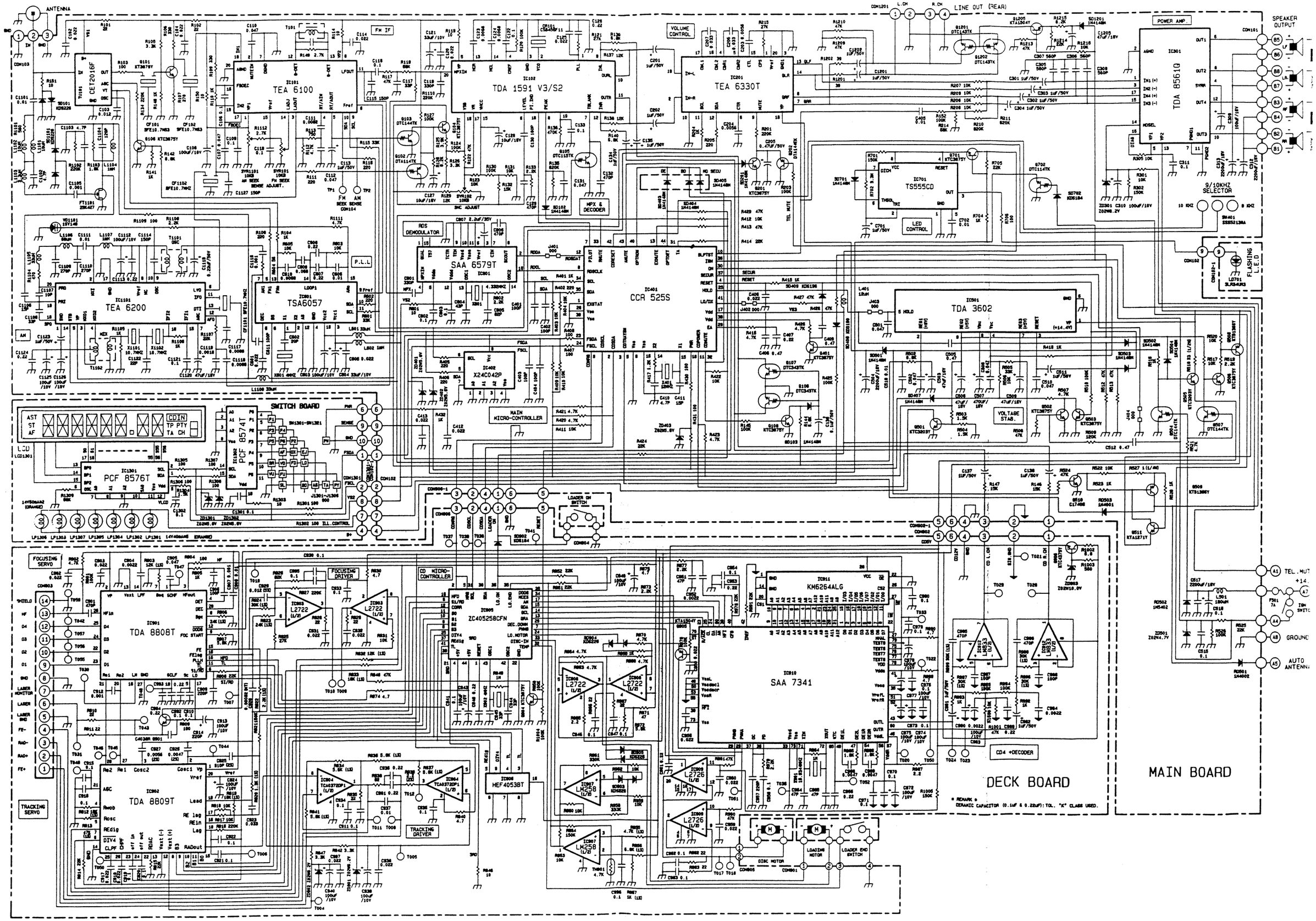
# CIRCUIT DIAGRAM DC922/00 - 1ST VERSION



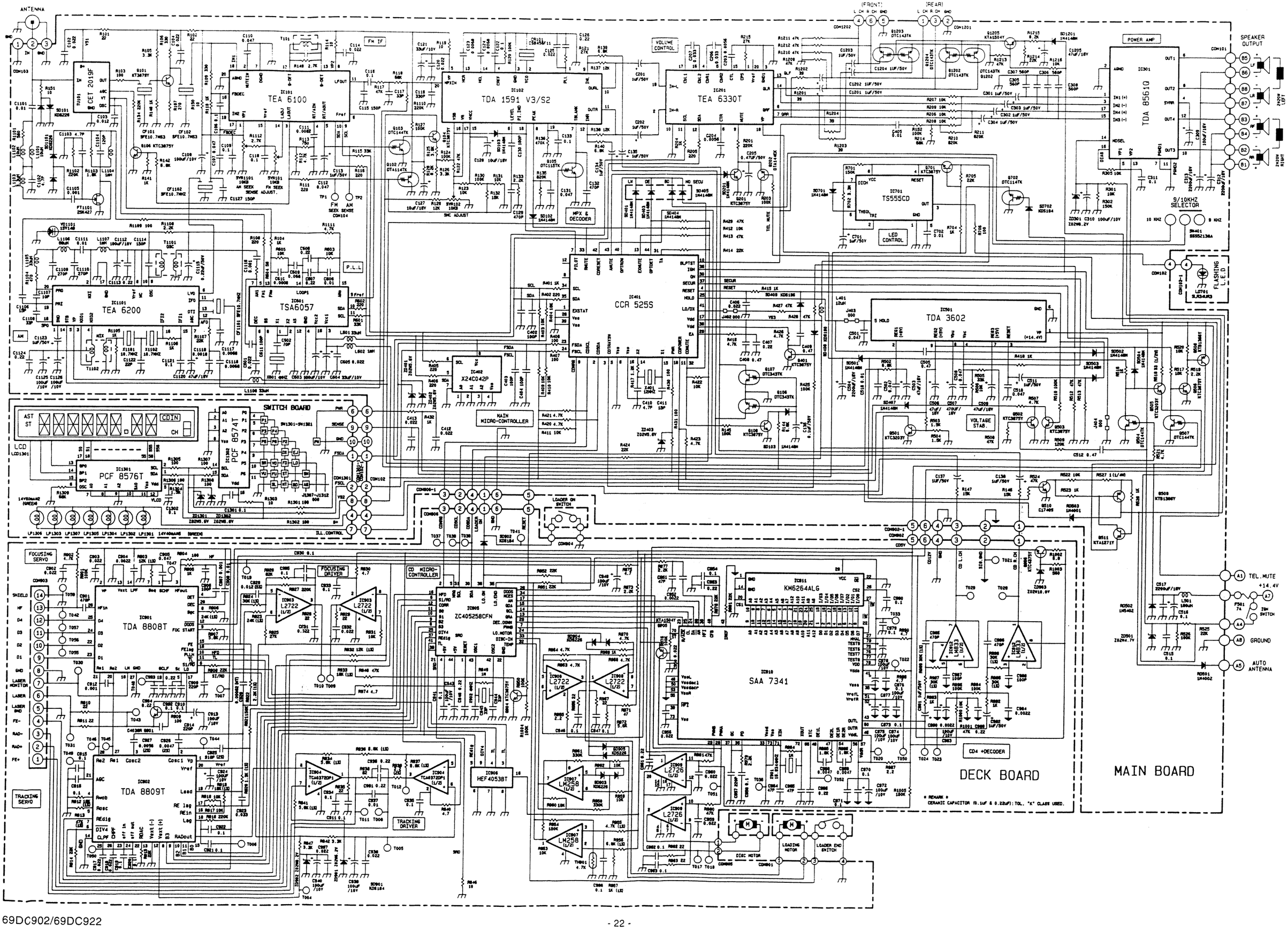
# CIRCUIT DIAGRAM DC922/00 - 2ND VERSION



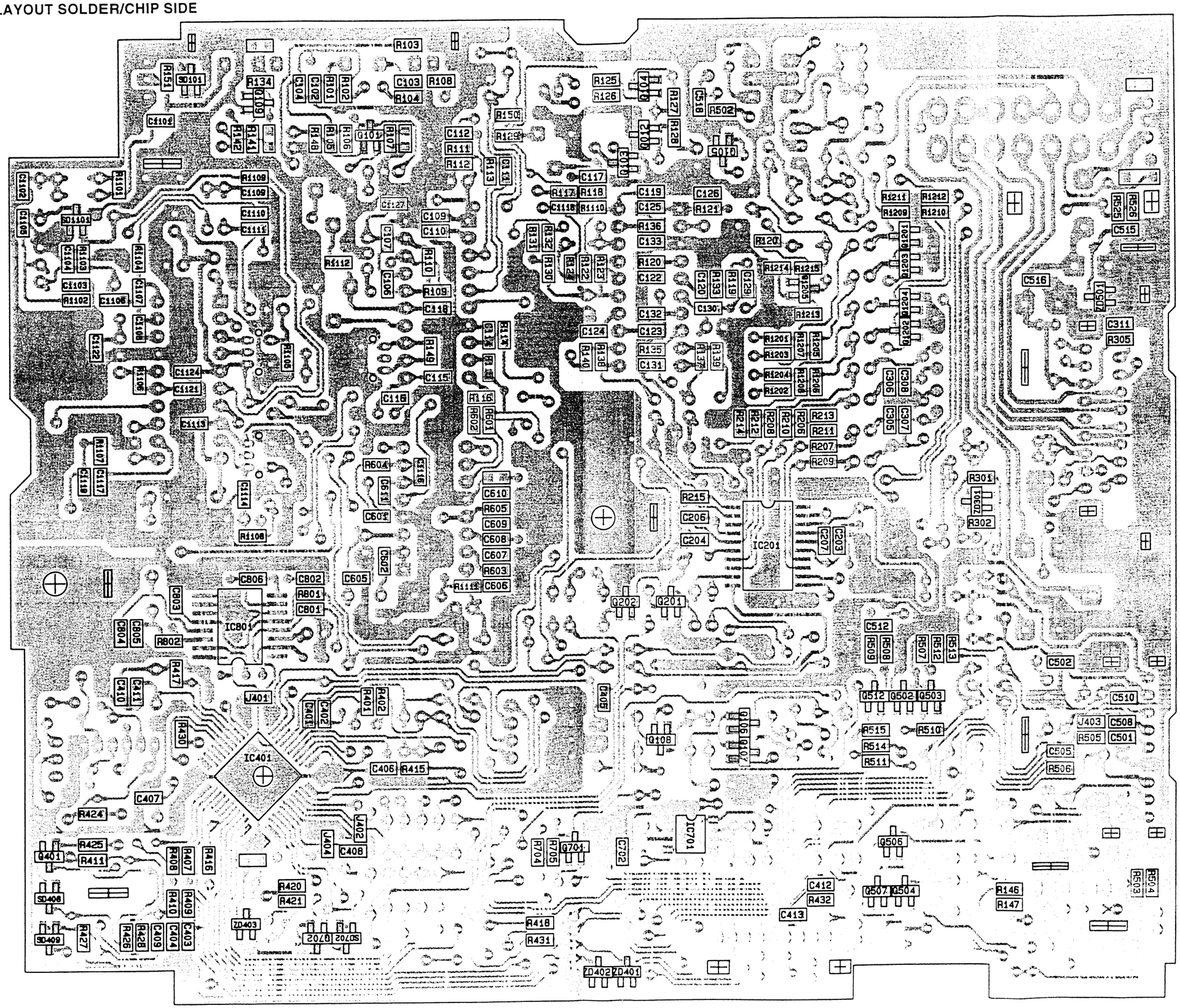
# CIRCUIT DIAGRAM DC922/00 - 3RD VERSION



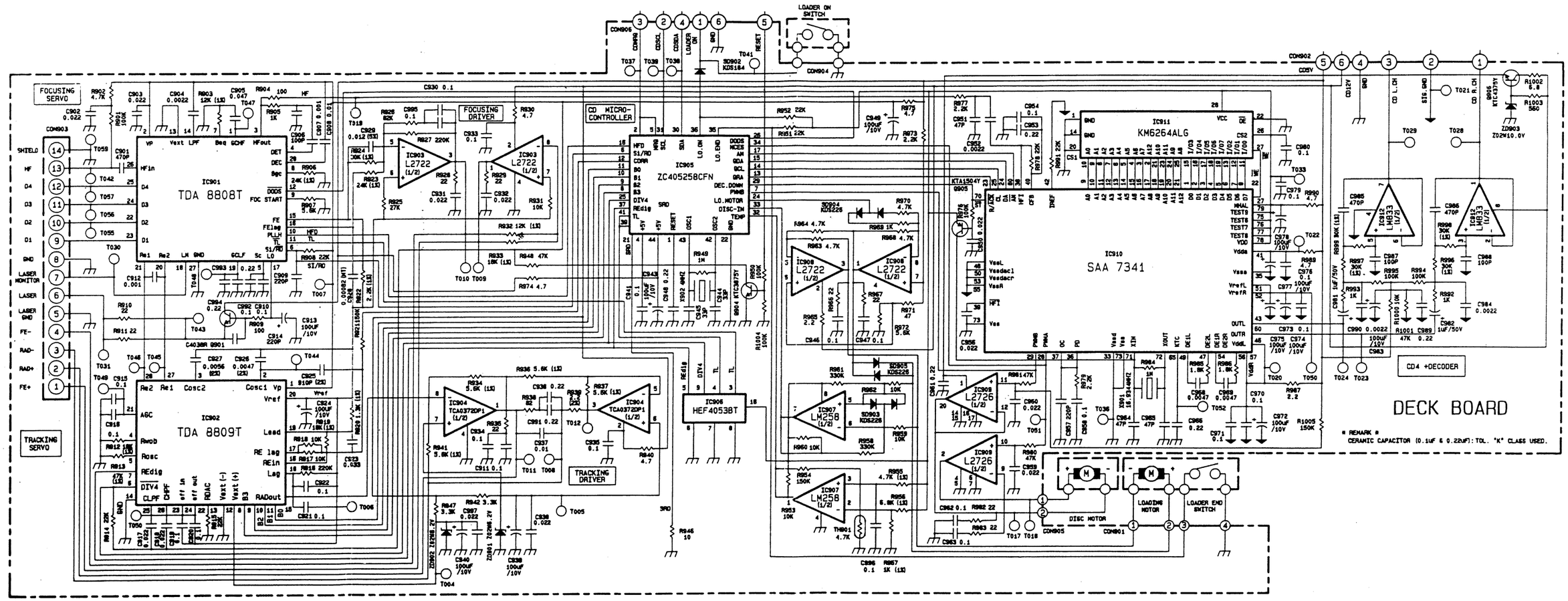
# CIRCUIT DIAGRAM DC922/10

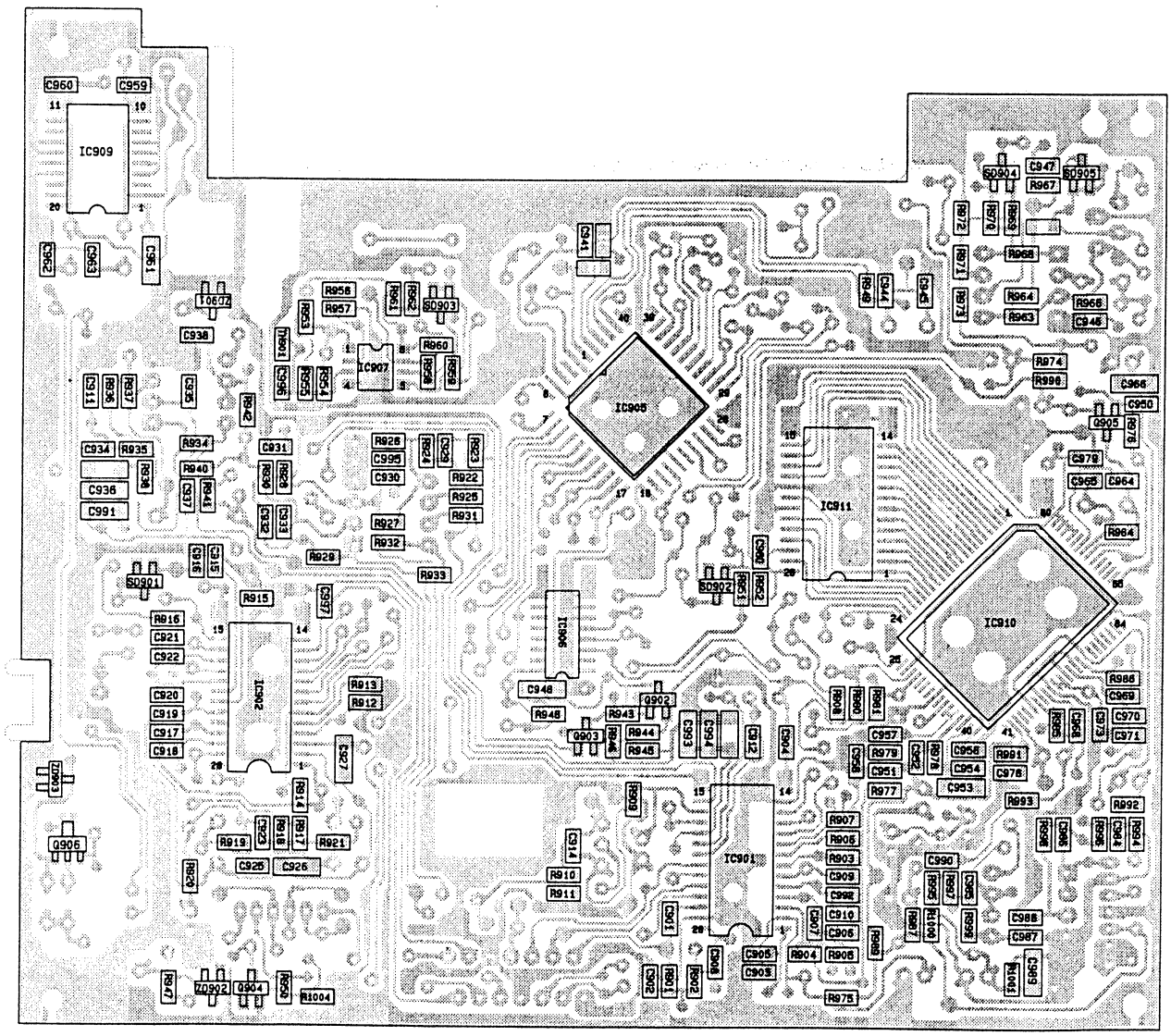


MAIN PCB LAYOUT SOLDER/CHIP SIDE

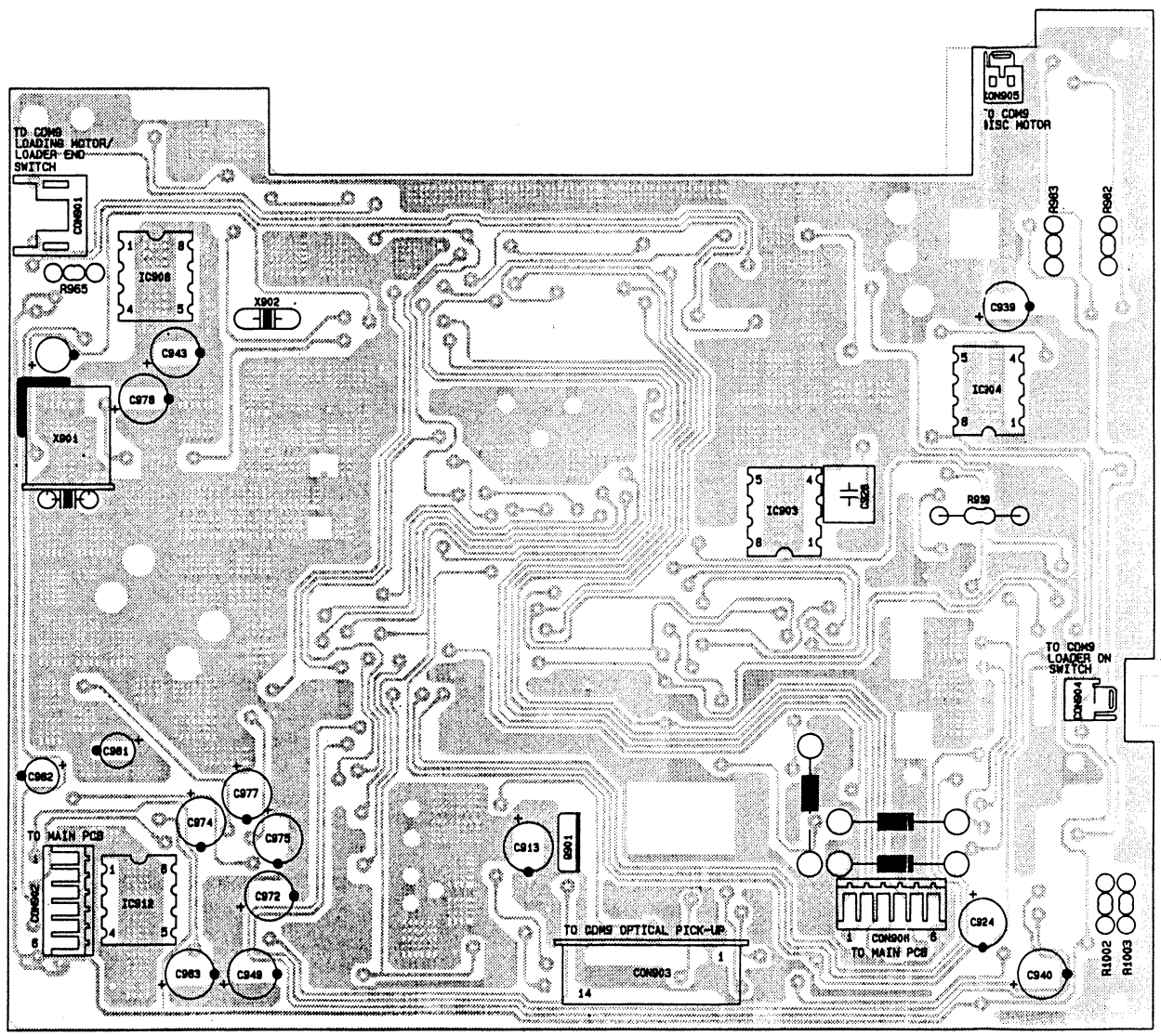


# CIRCUIT DIAGRAM CD DECK INTERFACE PC3

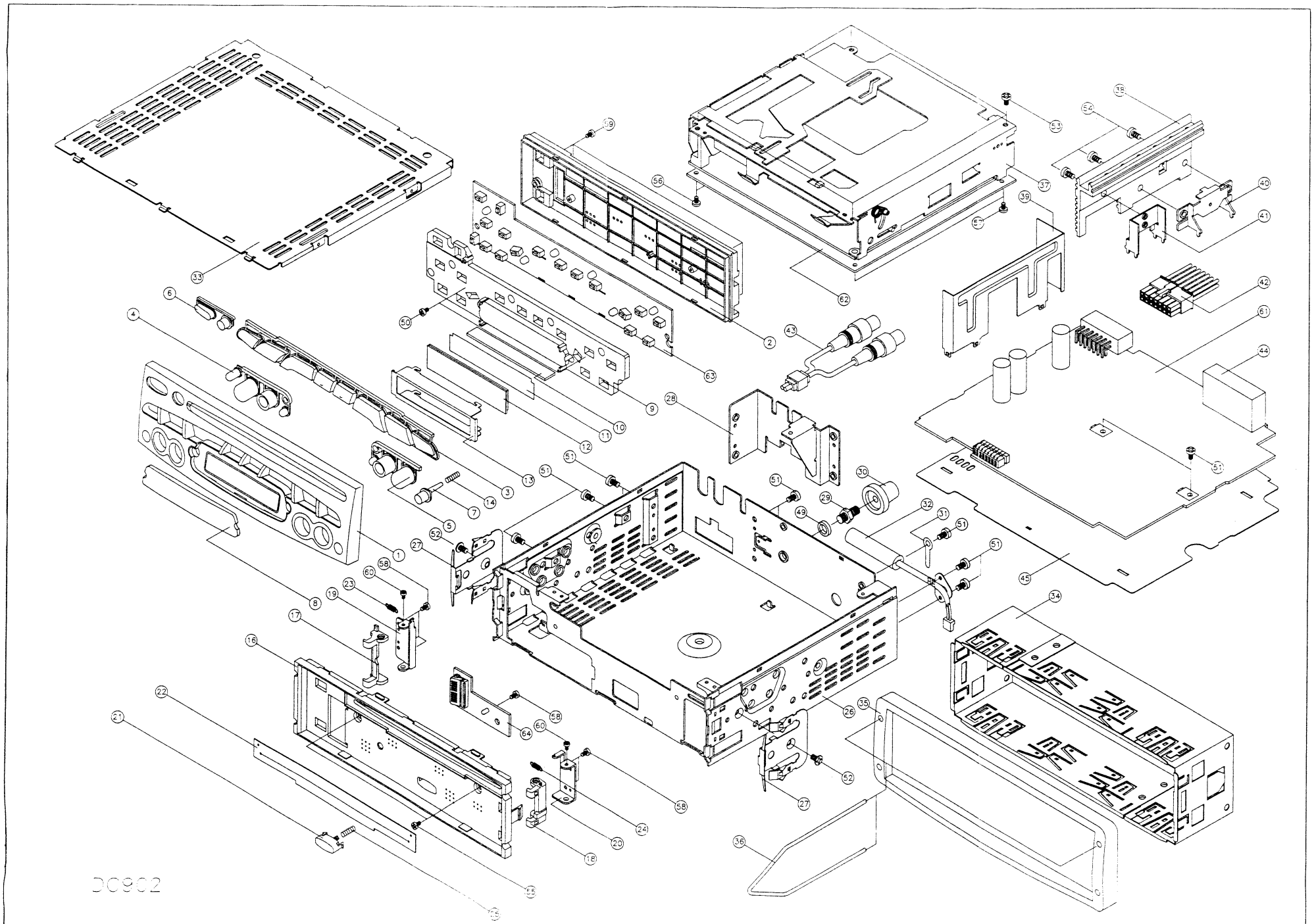



IC909
IC907
IC905
IC911
IC910
IC902
IC901
IC906
Q905
Q904
Q903
Q902
Q901
ZD902
R1004
SD901
SD902
SD903
SD904
SD905

## CD DECK INTERFACE PCB LAYOUTS



EXPLODED VIEW 69DC902



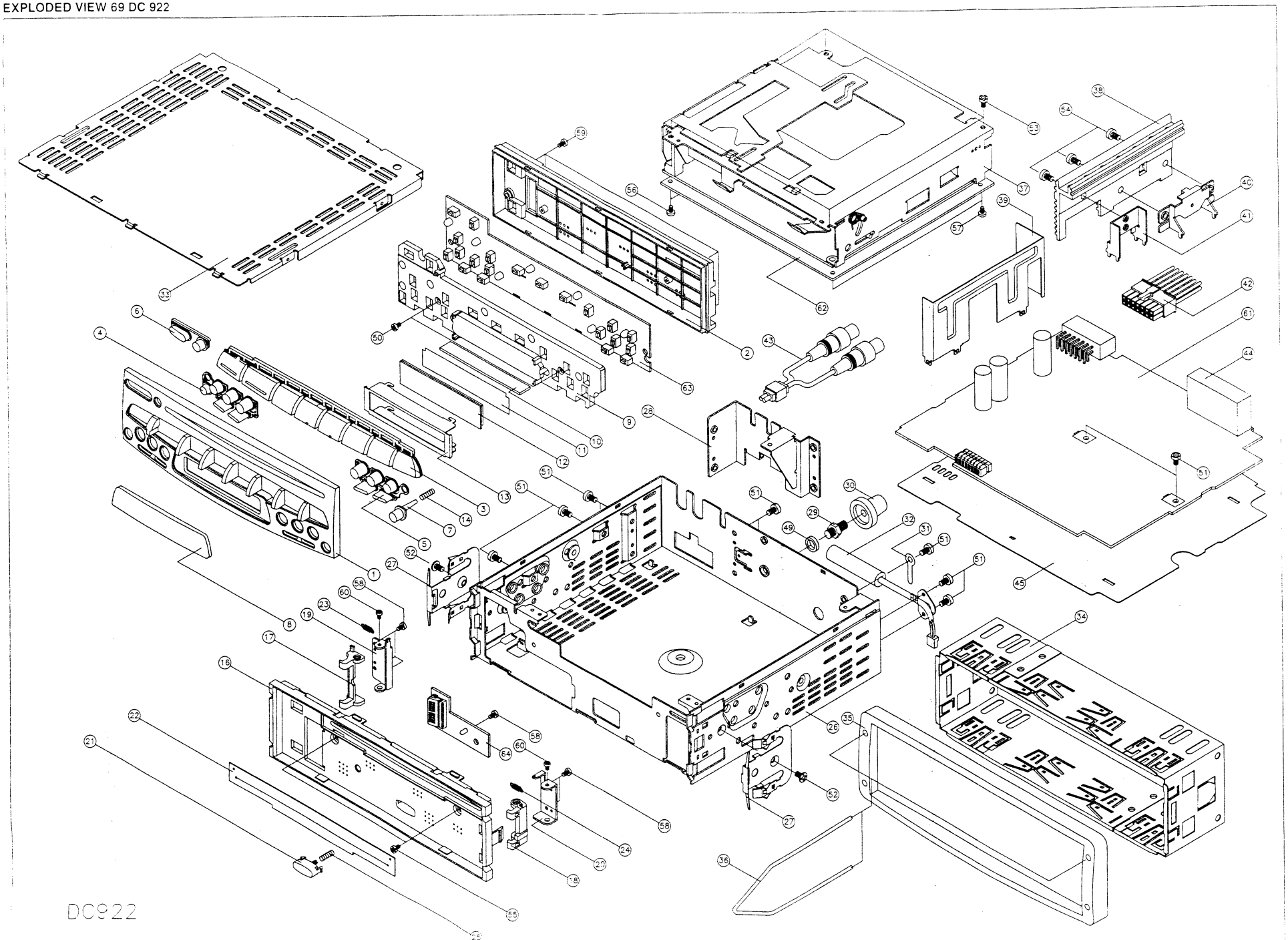
## MECHANICAL PARTS

| | | |
|---|---|---|
| 1 | 4822 459 50967 | Front panel assy - DC902/00 |
| 1 | 4822 459 04039 | Front panel assy - DC902/10 |
| 1 | 4822 459 50963 | Front panel assy - DC922/00 |
| 1 | 4822 459 04037 | Front panel assy - DC922/10 |
| 1 | 4822 459 04035 | Front panel assy - DC922/80 |
| 2 | 4822 459 50961 | Back panel assy |
| 3 | 4822 410 63936 | Function button assy - DC902 |
| 3 | 4822 410 63914 | Function button assy - DC922 |
| 4 | 4822 410 63937 | Left button assy - DC902 |
| 4 | 4822 410 63912 | Left button assy - DC922 |
| 5 | 4822 410 63938 | Right button assy - DC902 |
| 5 | 4822 410 63913 | Right button assy - DC922 |
| 6 | 4822 410 63939 | Power / CD eject button assy - DC902 |
| 6 | 4822 410 63911 | Power / CD eject button assy - DC922 |
| 7 | 4822 410 63935 | Release button - DC902 |
| 7 | 4822 410 63909 | Release button - DC922 |
| 9 | 4822 380 20512 | LCD reflector assy - DC902 |
| 9 | 4822 380 20508 | LCD reflector assy - DC922 |
| 14 | 4822 492 33514 | Release button spring |
| 16 | 4822 464 70668 | Base panel |
| 21 | 4822 410 63908 | Push button |
| 22 | 4822 423 41292 | Dust cover assy |
| 25 | 4822 492 33515 | Spring push |
| | 4822 417 11253 | Hinge assy L |
| | 4822 417 11254 | Hinge assy R |
| 32 | 4822 267 31965 | Aerial jack |
| 34 | 4822 691 10447 | Sleeve |
| 35 | 4822 459 20594 | Front ornament rim |
| 42 | 4822 321 63106 | Wire assy |
| 43 | 4822 321 63105 | RCA cable assy - DC902/10, DC922/00/80 |
| 43 | 4822 320 11151 | RCA cable assy front - DC922/10 |
| 43 | 4822 320 11152 | RCA cable assy rear - DC922/10 |
| | 4822 423 41293 | Cap for RCA jack - DC902/10, DC922 |
| | 4822 462 72106 | Lamp cap orange - DC902/00, DC922/00 |
| | 4822 462 10625 | Lamp cap green - DC902/10, DC922/10/80 |
| 64 | 4822 214 52268 | Front B pcb assy |
| | 4822 460 11022 | Front unit complete - DC902/00 |
| | 4822 459 04041 | Front unit complete - DC902/10 |
| | 4822 459 50962 | Front unit complete - DC922/00 |
| | 4822 459 04038 | Front unit complete - DC922/10 |
| | 4822 459 04036 | Front unit complete - DC922/80 |
| | 4822 253 30479 | Fuse 7A KS |

## ACCESSORIES

| | | |
|---|---|---|
| | 4822 736 22552 | Instructions for use - DC902 |
| | 4822 736 22539 | Instructions for use - DC922/00 |
| | 4822 736 14048 | Instructions for use - DC922/10 |
| | 4822 736 14047 | Instructions for use - DC922/80 |
| 36 | 4822 404 60814 | U-bracket |
| | 4822 600 10376 | Case for detachable unit |

EXPLODED VIEW 69 DC 922



## ELECTRICAL PARTS MAIN SET

### MISCELLANEOUS

| | | |
|---|---|---|
| CF101.. | 4822 242 82162 | Ceramic filter 10.7MHz |
| CR101 | 4822 242 82163 | Ceramic resonator 456kHz |
| SVR101.. | 4822 101 30891 | Trimpot 10k |
| SW401 | 4822 277 21812 | Slide switch |
| TU101 | 4822 210 10669 | FM tuner unit |
| | | |
| VD1101 | 4822 130 81673 | 1SV149 varactor - DC902/10, DC922 |
| X401 | 4822 242 82168 | Crystal 12.0MHz |
| X601 | 4822 242 82169 | Crystal 4.0MHz |
| X801 | 4822 242 82171 | Crystal 4.332MHz - DC902/00, DC922/00/80 |
| X1101.. | 4822 242 82167 | Crystal 10.7MHz - DC902/10, DC922 |

### SEMICONDUCTORS

| | | |
|---|---|---|
| FT1101 | 4822 130 63868 | FET 2SK427T - DC902/10, DC922 |
| IC101 | 4822 209 73507 | TEA6100/N3 FM-IF |
| IC102 | 4822 209 30859 | TDA1591/V3 MPX stereo decoder |
| IC201 | 4822 209 31979 | TEA6330T audio control |
| IC301 | 4822 209 90644 | Power IC |
| | | |
| IC401 | 4822 209 90642 | Microprocessor |
| IC501 | 4822 209 33029 | TDA3602 regulator |
| IC601 | 4822 209 61954 | TSA6057 PLL |
| IC701 | 4822 209 90643 | 555 timer |
| IC801 | 4822 209 31981 | SAA6579T demodulator - DC902/00, DC922/00/80 |
| | | |
| IC1101 | 4822 209 72247 | TEA6200/V2 AM tuner IC - DC902/10, DC922 |
| LD701 | 4822 130 83994 | Front LED |
| Q101 | 4822 130 63867 | KTC3879Y |
| Q102 | 4822 130 90326 | DTA114TK |
| Q103.. | 4822 130 62492 | DTC144TK |
| | | |
| Q104.. | 4822 130 63866 | KTC3875Y |
| Q105 | 4822 130 63872 | DTC115TK |
| Q106.. | 4822 130 62893 | DTC343TK |
| Q202 | 4822 130 60326 | DTA144EK |
| Q501.. | 4822 130 63488 | KTC3203Y |
| | | |
| Q508.. | 4822 130 63869 | KTB1366Y |
| Q510 | 4822 130 42431 | 2SC1740S |
| Q511 | 4822 130 61271 | KTY1271Y |
| Q702 | 4822 130 90323 | DTC114TK |
| Q1201.. | 4822 130 61801 | DTC143TK - DC902/10, DC922 |
| | | |
| Q1205 | 4822 130 63871 | KTA1504Y - DC902/10, DC922 |
| RD501.. | 5322 130 81057 | 1N4002A |
| RD502 | 4822 130 33765 | 1N5402 rectifier |
| SD101.. | 4822 130 83997 | KDS226ST |
| SD102.. | 4822 130 80448 | 1N4148M |
| | | |
| SD408 | 4822 130 83995 | KDS190ST |
| SD409 | 4822 130 83996 | KDS196ST |
| SD702 | 4822 130 83637 | DCB010 |
| ZD301 | 4822 130 70003 | Zener 8.2V SOT23 |
| ZD401.. | 4822 130 70001 | Zener 5.6V SOT23 |
| | | |
| ZD501 | 4822 130 83998 | Zener 4.7V SOT23 |

### COILS

| | | |
|---|---|---|
| L501 | 4822 157 71757 | Choke 180µH |
| T101 | 4822 157 71769 | Coil, detect |
| T1101 | 4822 144 40092 | RF transformer - DC902/10, DC922 |
| T1102 | 4822 144 40093 | RF transformer - DC902/10, DC922 |

### ELECTRICAL PARTS FRONT UNIT

| | | |
|---|---|---|
| IC1301 | 5322 209 11129 | PCF8576T LCD driver circuit |
| IC1302 | 5322 209 11578 | PCF8574T I/O circuit |
| LCD1301 | 4822 130 91516 | LCD assy - DC902/00, DC922/00/80 |
| LCD1301 | 4822 135 00011 | LCD assy - DC902/10, DC922/10 |
| LP1301 | 4822 134 41223 | Lamp 14V 40mA |
| | | |
| LP1303 | 4822 134 41224 | Lamp 14V 60mA |
| SW1301.. | 4822 276 13643 | Tact switch |
| ZD1301.. | 4822 130 70001 | Zener 5.6V SOT23 |
| ZD1303.. | 4822 130 34233 | Zener 5.1V - DC922 (only in first version) |

### CD UNIT

### MISCELLANEOUS

| | | |
|---|---|---|
| | 4822 691 10366 | CDM9 mechanism complete |
| TH901 | 4822 111 92221 | Thermistor 4k7 |
| X901 | 4822 242 81609 | Crystal 16.9344MHz |
| X902 | 4822 242 72579 | Ceramic resonator 4.0MHz |

### SEMICONDUCTORS

| | | |
|---|---|---|
| IC901 | 4822 209 73234 | TDA8808 photo diode S/P |
| IC902 | 4822 209 31973 | TDA8809 radial error correction |
| IC903.. | 4822 209 30146 | L2722 amplifier |
| IC904 | 4822 209 62059 | TCA0372 tracking driver |
| IC905 | 4822 209 90646 | Microprocessor |
| | | |
| IC906 | 5322 209 14481 | HEF4053BT bilateral |
| IC907 | 4822 209 90647 | Linear opamp |
| IC909 | 4822 209 90648 | L2726 opamp |
| IC910 | 4822 209 30388 | SA7341GP optical-DSP |
| IC911 | 4822 209 63985 | FCB61C65L-70P memory RAM |
| | | |
| IC912 | 4822 209 83163 | LM833N amplifier |
| Q901 | 4822 130 61276 | 2SC4038 |
| Q902.. | 4822 130 63871 | KTA1504Y |
| Q903 .. | 4822 130 63866 | KTC3875Y |
| Q906 | 4822 130 63873 | KTC43750 |
| | | |
| SD901.. | 4822 130 83637 | DCB010 |
| SD903.. | 4822 130 83997 | KDS226ST |
| ZD901 | 4822 130 70002 | Zener 6.2V |
| ZD902 | 4822 130 70003 | Zener 8.2V |
| ZD903 | 4822 130 70004 | Zener 10 V |